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"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in EUROPE and AMERICA were under deeper obligations than to the Medical and Physical Journal of London, now forming a long, but an invaluable, series."—RUSH.

*For the London Medical and Physical Journal.*

## *Further Remarks on the Varioloid Disease recently prevalent in Derby;* by THOMAS BENT, M.D.

THE remarks of Dr. Pew on my observations on the disease which has appeared in this neighbourhood, and to which Dr. Thompson has applied the term *varioloid*, are evidently written more in the spirit of a partisan than of one intent on investigating truth. He seems to be so fully possessed with the notion of the prophylactic infallibility of cow-pox, as not to be able, for a moment, to endure its perfection being questioned. His great zeal in the cause has led him to misapprehend the tendency of my opinions.

I have not maintained that the disease was true small-pox, but, on the contrary, have distinctly stated that it differed from "*genuine small-pox*;" and the more natural inference to be deduced from the whole of my observations is, that I was rather inclined to consider the disease to be one *sui generis*. Other parts of my paper have been misinterpreted or misrepresented in a similar manner, as will be obvious to any one who will take the trouble to read it, together with Dr. Pew's remarks; and it appears, therefore, quite unnecessary for me to point them out.

I will only observe, that the cases of Mary Miller and Joseph Pegg, who had not had cow-pox, were given to illustrate the characters of the disease; which, as is distinctly observed, happened in the same form in persons vaccinated as in those who had never had cow-pox. The case of the young lady, daughter of a surgeon resident in Derby, is named in proof of this; and many others might have been given.

I mentioned formerly that the disease did not seem to be "merely small-pox modified by vaccine influence, because the symptoms were the same in those who had not been so

influenced as in those who had." This has happened in frequent instances besides those above alluded to, and certainly forms a remarkable feature in the complaint; but I do not mean to maintain that it is always so, and am not sure that it is not more generally otherwise. More extended observation, and the testimony of some of my medical friends who have had much experience in the disease, incline me to think it is usually milder after vaccination than independent of it, and that it has been much more frequently fatal to those who have not previously had cow-pox.

Should this prove to be the fact, it will be one of the strongest reasons that can be given for the opinion that the disease is variolous; and the influence of cow-pox being thus made evident, proves that, although the effect of this *prophylactic* on the constitution has taken place, individuals are nevertheless liable to be attacked with small-pox. If the disease be only an aggravated form of chicken-pox, how does it happen that it is rendered milder by the influence of vaccination?

It is, perhaps, worth while to mention, by way of giving a more accurate idea of the extent to which this disease has prevailed, that it has been as general as I have ever known measles, scarlet-fever, hooping-cough, or any other contagious malady. Although recent events have lowered the value of the vaccine disease in my estimation, and I am induced to believe it less beneficial than for a time it appeared, I am still no anti-vaccinist; but, on the contrary, think mankind will be gainers by the discovery of cow-pox inoculation, and that it will appear, a milder disease has been substituted for one loathsome and dangerous.

My friend and coadjutor at the Infirmary, Dr. Forester, having expressed to me an intention of making known to you his observations and opinions on this subject very soon, and as the additional testimony of one so amply qualified cannot fail to give weight to the evidence already before the public, and as there is a near coincidence in our sentiments, I feel disinclined to extend these observations further at present.

I cannot conclude, however, without remarking, that a degree of pertness and flippancy prevails throughout Dr. Pew's observations ill-suited to the discussion of such a subject; and there is really something very ludicrous in the circumstance of an individual but little known attempting to laugh down opinions so much entitled to respect as those of Professors Monro and Thompson, and Mr. Hennen.

*Derby; April* 15, 1819.

## *Observations on Spasmodic Constriction of the Anus*; by W. White, Esq.

In consequence of some observations which appeared in your Journal of January last, respecting a mode of treating spasmodic constriction of the anus, by Mons. Boyer, I have taken the liberty of sending you the following remarks and case, if you judge them worthy a place in your valuable Miscellany.

Some of your readers may probably recollect that a paper of mine, on Stricture of the Rectum, was noticed in the Medical and Physical Journal of April, 1818, as having been read at the anniversary meeting of the London Medical Society; and also a wish was expressed that it might be printed in the next volume of the Transactions of that Society, from the important practical remarks it contained. Reference is made to that paper, because there were likewise some observations on spasmodic constriction of the sphincter ani muscle, which will prove the complaint had not been overlooked; though, as Dr. Baillie* has very justly observed, it has been very little noticed by practitioners. But the principal design in this communication is to shew that the complaint may be relieved without the necessity of dividing the sphincter; an operation, the propriety of which I had a long time since contemplated performing in the event of other means failing that had been adopted: and I think every candid practitioner will agree with me, that, if equal benefit can be obtained by a method which does not derange the structure of the part, it ought to be preferred.

Although the spasmodic constriction alluded to is sometimes only occasional, yet in other instances the spasm becomes permanent; but even then the muscle contracts still further on attempting to introduce either the finger or a bougie into the rectum, so as always to render it extremely difficult, and on some occasions altogether impracticable, at least to introduce the finger. In those cases which have come under my notice, the sphincter has appeared much thicker and broader than it is naturally; so that the distance between the external and internal margin of the muscle (called, by Dr. Baillie, external and internal sphincter,) is much greater than in a state of health: at the same time there does not appear to be *any other alteration* in the

* A case, with some very important remarks on spasmodic constriction of the sphincter ani, is published in the fifth volume of the Transactions of the Royal College of Physicians, by Dr. Baillie.

structure of the part; for, when the finger is admissible, the inner membrane of the intestine has a healthy feel. I have also noticed the fissure mentioned by Mons. Boyer, and coincide in opinion with that gentleman. It is the consequence of the contracted state of the anus, as the effort to pass a motion in such cases is exceedingly great; and, from the violent and often ineffectual straining, the complaint in that situation is far more painful and distressing than either a spasmodic or permanent stricture higher up the passage.

In various cases, where simple stricture has occurred a few inches up the rectum, I have observed a disposition to spasmodic constriction at the anus, though in so slight a degree as not to excite the particular attention either of the patient or the surgeon; yet, however, sufficiently obvious to induce me to think, that in more violent cases of that nature, the superior stricture is commonly the cause of the spasmodic constriction which takes place at the sphincter.

In one case (at present under my care) the existence of two strictures at the rectum had been ascertained by different surgeons a long while before the patient felt any inconvenience whatever at the sphincter, which is now spasmodically constricted; and I have not hitherto met with a case of that nature which has not been accompanied by a stricture higher up the rectum: from which circumstance I have been led to believe, that, whenever there is a permanently contracted state of the sphincter, if the intestine be carefully examined with a bougie not less than ten inches in length, and of a sufficient diameter to pass the sphincter, a stricture higher up the passage will be found very often to exist. Nevertheless, the cases mentioned by M. Boyer may perhaps be considered as a proof that the spasmodic constriction is also an original disease, from the complete and permanent advantage which is said to have been derived from the division of the sphincter by the bistoury. From this difference in our experience, it would seem as if the complaint sometimes occurred as a primary, and at other times as a secondary, affection.

With respect to the mode of treating spasmodic constriction at the anus, I have to observe that the principal mean is the bougie, which has not hitherto disappointed me in removing that complaint; but it is of great consequence what kind is employed,* as those commonly sold for strictures in the rectum are too hard, and generally produce too much irritation, to be used with advantage, not only in the spasmo-

* I have given directions, in the second edition of my Work on Strictures of the Rectum, how to prepare such as I employ.

dic, but also in the simple permanent, stricture, which occurs higher up the intestine. In using the bougie, great caution is necessary, as it should be introduced in a gentle and slow manner until it passes above the upper stricture, and to remain as long as the patient can bear it, which at first, perhaps, will not be longer than a quarter of an hour or twenty minutes; but, after the passage becomes accustomed to the stimulus, the patient will be able to retain it a considerable length of time. It is, however, proper to observe, that the size of the bougie should be very gradually increased, or otherwise there may be so much inflammation excited as to render it necessary to suspend its use for some time. The plan should be regularly persevered in till the passage admits a large bougie; and I have hitherto found, that, in proportion as the intestine becomes dilated at the superior stricture, the spasmodic constriction at the anus gives way.

As the bougie, then, has been found adequate to the removal of permanent spasmodic constrictions of the sphincter ani, when combined with strictures higher up the passage, it may be reasonably expected that the same means will prove equally efficacious when the complaint occurs as a primary affection. If Mons. Boyer considers it expedient to employ a large bougie after the division of the sphincter, ("to prevent irregular adhesions of the wound,") which must be very painful, why not in the first instance give that instrument a fair trial?

CASE.

I received the following statement some time before th patient came under my care. It was written by his son, dated Nov. 7th, 1817.

"Sir,—I have collected the following particulars from my father, and those who have attended him, which I take the liberty of stating to you, and request your opinion upon them as early as you can conveniently write. The first sensible symptoms that appeared, took place about a fortnight before my father found himself obliged to confine himself at home. These were, *heat* after walking; and, after much walking, pain, which for a few days generally subsided in an hour: these symptoms, however, increased, and the voiding of his stools was followed by considerable anguish and increased heat, till, on September 3, he was incapable of going out. Piles were suspected, and the ordinary treatment adopted without success: indeed, I think his complaint was aggravated by it. His sufferings became excruciating. He had been inspected by a surgeon, who pronounced, I believe, in the first instance, the formation of matter; but subsequently, on my enquiring of him what he considered my father's complaint to be, said he feared a scirrhous tumor. He is still under the same

surgeon's care, who at present enjoins nothing but injecting and guarding against costiveness. My father certainly does not suffer so much as at the first; but, upon every evacuation by stool, or passing of wind, most acute pain is produced, which sometimes lasts one or two hours, particularly when a stool has been passed. Sometimes he has two or three stools a-day, with perhaps as many mistaken calls, generally very relaxed, and always voided with sudden violence, so as, with all care, not to be able always to confine them to the utensil, but discharged against the top. Whenever they become figured, which is very rarely, they pass in the form of very narrow tape, and adhere to the back of the utensil in a plaited pile. Matter has once been seen. Gravel passes with the urine mixed with mucus. A very frequent sensation of distension in the belly, with a feeling, after every stool, of not having voided all the fæces; occasional gripings at the pit of the stomach; at passing a stool, something which my father describes as resembling a *lip** protrudes on one side of the anus. My father's age is 70-71; has been all his life subject to very relaxed bowels; for more than thirty years invariably vomited his breakfast, and often his dinner. This ceased almost entirely twenty years ago, when he was attacked, in all appearance, in a way similar to the present; but rapidly recovered, after having one day voided a stool so powerfully offensive to the smell as nearly to cause his fainting away.

"I should mention also that the passage is, *and ever has been since my father can remember*, remarkably narrow; so much so, that, whenever he passed a figured stool, and was able to see it by having used the night-table, it never seemed larger than the finger of a little child. He has led a very active, and indeed laborious, life, but regular and temperate in all his habits; and I should consider him yet as possessing much vigour of constitution for his age. I am, Sir, very truly yours."

In answer to the preceding statement, I informed the gentleman that it was impossible to give a decided opinion in such a case, notwithstanding his very accurate description of the symptoms; for, though it was evident the passage must be in a very contracted state, yet the nature of it could only be ascertained by a manual examination. The friends of the patient were anxious that he should put himself under my care; but, from the history of the case, I gave them very little encouragement to hope that I could render him any service. However, as soon as he felt himself able, he undertook a journey from London to Bath, where he arrived in the beginning of January, 1818. Although he had been relieved from the acute symptoms induced by inflammation supervening, he still continued to experience a great deal

* This was merely a small fleshy excrescence.

of pain at every evacuation; and the inclination to go to stool was so sudden and frequent, that he was afraid to go out of the house, so that the greatest part of the day was spent in the most uncomfortable and tantalizing manner, constantly feeling as if something remained which it was not in his power to discharge. He also complained of great pain and heat about the anus, and a sense of fullness in the bowels, with a considerable difficulty in passing wind downwards. His general health and appetite were good.

On examination, I found the sphincter ani contracted to such a degree as to render the introduction of the finger impracticable; however, with some difficulty and exquisite pain to the patient, a small bougie was passed into the rectum: and, between five and six inches from the anus, a stricture was discovered. On his making an effort as if going to stool, a superficial fissure was observed at the back part of the anus, which appeared to be nothing more than the skin having given way from the violent straining of the part.

The use of the bougie was proposed as the most likely means of affording relief; but I confess there was very little expectation that the patient would have submitted to its repeated introduction, from the torture it occasioned on passing through the sphincter the first time. However, the success I had met with on similar occasions, enabled me to encourage him to persevere; and, in the course of nine weeks, the passage admitted a large bougie, and the sphincter ani became so much relaxed as to allow the finger to pass very readily into the rectum, which had a healthy feel as far as the finger could reach: neither was there any enlargement of the prostate gland, which had been the opinion of another surgeon who had been previously consulted; but this opinion was given without any examination of the part, because it was at that time impracticable to introduce the finger into the rectum.

With the assistance of only a tea-spoonful of castor-oil taken daily, one or two evacuations were procured in the course of the morning, which became gradually more copious, and discharged in a more natural and regular manner; so that, in the course of a short time, having a motion was attended with very little pain or difficulty, and ultimately none at all. The tenesmus also, with which the patient had been so long annoyed, entirely ceased.

As auxiliaries, it may be right to mention that the hip-bath was used for a few minutes every day previous to employing the bougie, which appeared to render its introduction easier by somewhat relaxing the sphincter; and,

after its removal, a few grains of the ext. papav. alb. dissolved in a little warm water, was thrown up as an injection, which was continued as long as the irritation of the part rendered it necessary.

As soon as the patient could properly manage the bougie himself, he returned home in a very comfortable state, to the great consolation of his friends, who had not calculated on his receiving so much benefit, particularly at his advanced period of life. He was requested to persevere in the occasional use of the bougie. I have twice heard of him since he left Bath, and the accounts both times were very satisfactory.

*Bath; April 9th*, 1819.

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*For the London Medical and Physical Journal.*

*Observations respecting the Pulse;* by PHILO PHYSIOLOGIÆ.

IT is equally true with regard to researches in science as with the more light and amusing occupations of human life, that the pleasure we derive from favourite pursuits animates in return the imagination, and lends to the subjects of them those vivid tints, the effect of which is like the beams of the moon on the prominences of the Alps, that add to the apparent grandeur of the objects over which they are emanated, whilst the surrounding scene is veiled in mists, or concealed from accurate observance by the shades of night; and, on contemplating them thus, we behold them with such a degree of admiration as they do not elicit from those who view the whole of nature as illustrated by the light of day. That such may be the case with regard to myself on subjects relative to the physiology of organized beings, I am well disposed to acknowledge; and I mention this as an apology for the undue importance I may, perhaps, attach to the questions respecting the *Pulse*, which were a short time since proposed by your correspondent, Mr. Littleton. I have hitherto neglected to offer such replies to those questions as my literary acquirements will enable me to adduce, from a hope that some person better qualified to treat on this subject might think it not unworthy of his pen; and it is in default of this, that I shall detail what will, probably, not be novel to Mr. Littleton.

The only author, besides Dr. Blackall, with whom I am acquainted, who describes the *redoubling pulse*, is Theophilus Bordeu. After stating the character of the diseases of which it is usually a sign, that physician observes—

"Cette reduplication ne paroit être que le fond d'une seule pulsation partagée en deux temps ou en deux pulsations; elle est sujette à laisser de temps en temps des intervalles; ces intervalles sont plus ou moins longs, ou plus ou moins fréquens, selon la nature ou le degré de la maladie.

"Cette dilatation, qui se fait en deux temps ou par un double effort, paroit assez comparable à l'effet d'un piston qui pousseroit une liqueur dans un cylindre elastique, de manière que le second jet de la liqueur n'attendit pas que le premier se fût répandre dans le vaìsseau." And he again says,

"C'est une dilatation qui devroit se faire naturellement en un temps, qui cependant se fait en deux temps ou par deux efforts sensìbles, et qui succède à une contraction naturelle de l'artère."*

This, as Mr. Littleton suggests, is the same with the *pulsus dicrotus* of Galen and Solano de Lucque, and which, in his translation of the latter author, Nihell terms the *rebounding* pulse: that it is the same, is evident from the description of its character.

Having replied to the questions of Mr. Littleton, I may, perhaps, be allowed to adduce a few additional observations. The Chinese physicians describe this sort of pulse in a very forcible manner, *as that which moves like a serpent in doubling itself.*† All the authors whom I have mentioned state, that it indicates the occurrence of hæmorrhage, or of some critical evacuation, especially from the lungs. Solano de Lucque calculates the interval that will elapse before the former will ensue, from the greater or less frequency of this redoubling of the pulse; and states, that when it occurs at every systole of the heart, the evacuation will take place within twenty-four hours. Galen considered it as indicative of plethora, excitation of the system, and undue firmness of the small arteries.

I would by no means advocate the propriety of the subtle distinctions made by Galen, Herophilus, and the Chinese physicians, of the phenomena of the pulse; but still I think that they are too much confounded by the generality of modern physicians. The chief divisions of Galen: the strong, weak, frequent, slow, full, small, hard, and soft, pulses; comprise all the varieties usually spoken of by modern authors. Every experienced observer must notice various other characters, and is probably prevented describ-

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* *Récherches sur le Pouls*, ch. v.

† See *les Sécrets de la Médecine des Chinois, consistant en la parfaite Connoissance du Pouls.* Grenoble, 1671.

ing them only from deference to custom. In the Chinese work, to which I have referred, there are several distinctions which, I believe, would furnish useful and decisive indications for the diagnosis of many diseases. I shall terminate this paper with a detail of the whole. There are four chief distinctions: the superficial, profound, quick, and slow. The varieties are: the full, empty, solid, large, fine, resounding, relaxed, rounded, uneven, long, short, raised, depressed, contracted or confined, weak, lively, hidden, precipitated, filled, suffocated, soft, hard, re-enforced, bound, intermittent, deceitful.

They use also the following metaphorical descriptions, which, although perhaps more curious than useful, evince much acuteness of observation: The pulse that moves like a serpent, in doubling its body; with inquietude, like a jay; like a frog out of the water; like a fowl, to one and the other side alternately; like a partridge, which runs a little, stops, and then hides itself; like a sparrow, hopping along a little way, and then stopping a little; skipping, like a goat; like a fish in the water; as if ants were creeping under the fingers. When we consider the minute directions the Chinese physicians give for the mode in which the pulse should be felt; the delicacy of touch they state to be requisite; and the particular pressure that should be made with each finger respectively and distinctly; we cannot be surprised that, with these notions, and their want of physiological knowledge, and consequently the greater necessity they have for an accurate observance of phenomena, they have been led to form the above subtle distinctions and metaphorical descriptions of phenomena of diseases, from which much and various useful information may doubtless be derived.

*London; April* 23, 1819.

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*For the London Medical and Physical Journal.*

*A Case of Amaurosis, induced by Terror;* by RICHARD PHILIP JONES, Esq. Member of the Royal College of Surgeons.

THE following case will serve to illustrate the influence of mental emotions in the production of disease. I am well aware it can afford no novelty to the generality of your readers; but I am confident, that some of the younger members of the profession (to whom I beg to offer it) will receive the communication with much satisfaction. This case occurred in a populous county in England, well supplied with medical practitioners; but, from the cause being novel in

their history of disease, they were led too prematurely to give a hopeless decision. This rash judgment induced the unhappy patient to try the effect of *witchcraft*; and, accordingly, those marvellous pretenders exorcised, charmed, &c. and, in short, proceeded to the full extent of their incantations. At this period, when the patient's hope to regain his sight was reduced to the last ebb, I casually became a visitor in the neighbourhood; and, hearing of the circumstances, requested that I might see him. He had evidently recent amaurosis: But what a melancholy picture of debility he presented! His tongue was covered with a thick crust; his pulse weak and feeble; his speech very plaintive and faultering; and he suffered excessive nervous irritation. These symptoms had been much aggravated by the decision of the surgeons, &c.

About seven months previous to this time, he was attacked by some highway-robbers in the night, who, without inflicting personal injury at the time, left him in a state of half insensibility, proceeding from the terror he was thrown into. About a week after this occurrence, he found a considerable diminution of his sight, which gradually became worse; and the barren results of his medical consultations only urged the contemplation of each day to add greater poignancy to his already too-irritable disposition. I ordered him an emetic, with directions that it should be repeated regularly, followed by purgatives, with occasional doses of calomel conjoined with the tartarized antimony. He was also advised to be electrified three times a-week; to pay due observance to his diet; keep his mind tranquil; and to use regular and gentle exercise. The peculiar results which marked the commencement of this treatment produced such sanguine hopes of ultimate success, that he assiduously persisted in those means for about three months, when a complete cure was effected. It was truly interesting to mark the progressive symptoms of amendment: in proportion to the degree in which the excessive irritability was subdued, he enjoyed returning vision.

*Suffolk-street, London; March* 17, 1819.

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*For the London Medical and Physical Journal.*

## *Observations on Cancer*; by T. Parkinson, M.D.

IN the following observations I purpose to treat of cancer, distinctly, under two different stages:—1. The scirrhous stage, *Symphylakesis passiva*; 2. The cancerous stage, *Symphylakesis progressiva*.

I have opposed the term Symphylakesis to that of Cancer; and, in rendering the term, the identity of the disease will be displayed.

Symphylakesis—Συν-*cum*, with, Φυλασσω, *incarcero*, to imprison: *complicated incarceration*.

Symphylakesis is, and cannot be otherwise, a secondary disease, arising out of one of those processes by which inflammation retires; namely, *Proscollèsis*, or morbid accretion. But, as the term implies, it has a peculiarity characteristic of its very nature, and by which it is distinguished from all other diseases, bearing, in external appearance, a strong resemblance. I am called upon, then, to point out such peculiarity. This I hope to be able to do most clearly, in giving the analysis of the disease.

I have deemed it expedient and necessary to banish altogether the hypothetical terms as applied to this disease, *hereditary*, *predisposition*, *idiosyncrasy*, *cancerous virus*, &c. and confine myself to the mere narration of the morbid animal process by which the disease is originally formed, and the manner in which it proceeds to its fatal termination; not deduced from theoretical notions, but from an abundance of practical observation.

It has fallen to my lot to be very generally consulted, both at home and at considerable distances from home, in cases supposed to be cancerous; in many of which I have had recourse to the operation, or, in a greater number of cases, have superintended the operation when it has been performed by others. This has afforded me opportunities sufficiently numerous of examining the diseased parts, after they have been removed by the operation; and in all instances I have discovered, that the disease called cancer consists of what the term Symphylakesis implies, namely, complicated incarceration.

Complicated incarceration, stands opposed to simple incarceration; simple incarceration, signifying merely the imprisonment of any animal solid, by being surrounded by accreted adipose membrane, without vital connexion and intertexture; and, consequently, without any new function being set up between the incarcerating cyst and the substance incarcerated; instanced in steatomatous tumors and scrofulous glandular tumors: and this form of disease is expressed by the term Phylakesis, Φυλασσω, *to imprison*. But complicated incarceration signifies something more than what i discovered in steatomatous and glandular tumors of the scrofulous denomination, namely, an association of a vital nature, connexion, and intertexture; and, consequently, a new and adscititious function set up and established between

the cyst and the body enclosed by it: this is instanced in the scirrhous tumor denominated Symphylakesis.

The solids so morbidly associated are generally supposed to be gland and adipose membrane: this is the common association in the disease before us, but perhaps not the only one. This circumstance will, however, be enquired into, when we consider that disease which is usually denominated Fungus Hæmatodes.

In the present discussion, I shall limit myself to that particular disease which is denominated the Cancerous Scirrhus; and which, if uninterrupted, destroys life through the slow and painful process of gangrenous ulceration, and the consequent constitutional sufferings. I shall, therefore, take it for granted, that the morbid connexion and function are established between a gland and adipose membrane.

Now, no such connexion can be formed in a healthy state of parts; while in health, they will each be distinct in their anatomical construction, and will duly exercise their distinct and individual functions: consequently, will be obedient to those laws which govern life, health, and disease, in legitimate solids.

But, when a change of structure takes place from disease, a corresponding change of function also will be the inevitable consequence. Under these circumstances, the subjects of disease will not be governed by the laws of health; neither will they obey those which are rigidly observed under all the primary diseases, in which there is no change of structure; and, consequently, no change of function, except what consists in an increased or diminished exercise of it.

The manner in which this change of structure, and of function, is effected, becomes our next consideration.

The two originally distinct solids, adipose membrane, and gland, become morbidly associated in their substances and in their official capacities: hence, they are no longer legitimate in their nature; neither are they under the control of the laws of the animal economy.

It appears to me essential to the accomplishment of this association, that the gland and the adipose membrane be both under inflammation at the same time, and that they be kept in close contact, so that accretion of the two solids may be fully and firmly established; and, indeed, that they should pervade each other's substance, or so intimately mix, as to become one individual adscititious solid.

The construction of the breasts of women is favourable to this kind of association, they being composed of glandular and adipose substances, in some degree connected with each other, but yet distinct in their structural arrangements and

functions; and they require only a less intensity of inflammation than what is requisite to destroy the solids; but yet sufficient to produce adhesion, and that the same tone of inflammation be kept up for some time, to unite them in one adscititious substance.

It appears, then, that Symphylakesis is always a secondary affection, the resulting consequence of a certain intensity of inflammation remaining after the parent inflammation has ceased; and cannot have existence without inflammation as its cause. Hence, then, is manifest, the necessity of proper attention to those diseases which prevail in the breasts of women, from the approach of puberty till the final cessation of the menses. It is possible, that a slight tone of inflammation, if suffered to be long continued, may be productive, ultimately, of the most serious and fatal consequences.

An enquiry into the nature of those changes which take place in the breasts of girls, and the function they assume at puberty, and preserve till the approach of old age, together with the manner which, at that period, they are deprived of their function; will direct us in drawing our nosological deductions, and lead us to the most appropriate treatment of those diseases to which they are particularly liable.

In childhood, the breasts of girls are not distinguishable by any external marks or configuration from those of boys; but, at puberty, those of the female have to prepare for the performance of a peculiar office they are expected to be called upon to fulfil; that is, to provide milk for future offspring. In this preparatory process, it is remarked, that the breasts enlarge, and become prominent, in consequence of assuming a new organization at developing what had been hitherto concealed; namely, a glandular substance, with an additional accumulation of adipose membrane: and, indeed, such an accretion seems essential to afford them their official capacity. In this state they remain, with those varieties which depend upon pregnancy, menstruation, giving of suck, &c. till the approach of old age; and then it is, that the functions not only of the breasts, but those of all the female sexual organs, cease; manifested by the incapability of bearing children, the final cessation of the menses, and by the removal of the glandular substance of the breasts, by a process retrogressive of that which established it at puberty.

Now, the breasts of women are not only exposed to injuries from external violence, which are followed by inflammation, but they are also peculiarly liable to inflame, under those changes which they undergo at the approach of puberty, in the intervals of menstruation, during that process,

in pregnancy, in giving suck, in weaning; and, in that important change which always take place at the final cessation of the menses.

At the approach of puberty, it has been already observed, that new appearances, properties, and capabilities, are put on; and, on this occasion, there is, perhaps always, some degree of pain complained of, at least generally there is: and it is not at all uncommon for that pain to be severe, especially on the approach of every periodical visitation, attended with enlargement of the whole substance of the breast. These symptoms, however, are mitigated, or even vanish, on a free menstrual evacuation, until the near approach of the succeeding visitation. This affection is seldom attended with any very serious consequences: so soon as the habit of menstruation is fully established, the complaint ceases altogether.

But there is another morbid affection, which sometimes occurs at puberty, in the acquisition of official capacity, which is more deleterious in its consequences; and to which I would lay claim to your close attention. Instead of the whole of the glandular substance being enlarged and painful, a certain definable part of it only is so affected, somewhat painful, especially under pressure; and is readily distinguished from the sound parts of the breast by its extraordinary hardness or density, forming a tumor describable by the feel. It does not resolve, though it is less painful in the intervals of menstruation.

I have mentioned this affection as occurring at puberty; it nevertheless happens, from adequate causes, at any period between the first appearance and the final cessation of the menses: and, let me add, the adequate causes are, whatever are capable of exciting and keeping up a certain, but low, tone of inflammation, in some distinct part of the glandular substance of the breast and the adipose membrane surrounding it.

A disease of this kind, being formed in early life, will remain dormant, and seemingly innoxious, without causing the woman to complain; will be passive, even when the other parts of the glandular substance are in the full exercise of their function: but it must be remembered, that, at the approach of old age, the pecul ar functions of the breasts are to cease wholly, and that is effected by the removal of that organic substance which was put on at puberty, and in which the official capability resided. All this is easily, and is always, accomplished under a natural and healthy state of the breasts: that is, the glandular substance of the breasts is absorbed, leaving the integuments loose and flabby, or

more commonly filled with adipose substance. But, under a diseased state of the adipose membrane, and especially under that form which I have described as accretion of adipose membrane, converted, as it were, into ligament, enclosing a part of the glandular substance, united with it in structure and function; an illegitimate substance, disobedient to the laws of the animal economy; it will be readily allowed, that such a production will not so easily be removed: indeed, it cannot; but that process which does actually remove the sound parts, makes the same attempt upon those diseased, and rouses them into deleterious energy: that is, inflames them. They then exercise their own adscititious function, establishing a system of their own; whose basis is morbid accretion and vital connexion between solids of every description, even embracing the bones.

It requires no extraordinary share of attention and discernment, to discover that the whole of this process is actually progressive inflammation, and should have some influence in directing the method of treatment in the scirrhous stage, or whilst it remains *Symphylakesis passiva.*

From this view of the subject, then, it appears that the scirrhus originates in inflammation; that it remains dormant, as a disease, after inflammation has ceased; at an advanced period of life, it is provoked into action of the same kind, and to the same effect, as that with which it was originally formed; that its progress is accretion, and all its consectaria; that it is not under the government of the laws of natural solids; that its type becomes *progressive;* and that its issue is fatal.

Having traced the scirrhus from its beginning, through its passive stage, down to its cancerous stage, I shall now view it in its progressive type, that is, as *Symphylakesis progressiva.*

What I would have understood by the progressive type, is, that state of the scirrhus which is advancing fast towards ulceration, or is already ulcerated. This state, though not peculiar to advanced age, rarely is met with till towards the approach of the final cessation of the menses. It then, after having been in a quiescent state for many years, is suddenly roused into strong and rapid action. The identity of disease is the same in every period of its existence; that of accretion of one solid to another, with vital connexion established between them: and, although the process commenced with the adipose membrane and the gland, yet it extends to all solids whatever, the skin, muscles, bones, &c.; embracing them all in one solid mass of disease, extending in every direction. The axillary glands become scirrhous, and very

commonly the arm on that side is œdematous; the surface of the original tumor becomes ulcerated; the pain becomes severe and lancinating; and the constitutional sufferings are obviously increased. The progress of the cancerous ulceration is peculiar to itself: whilst it increases in all directions, it becomes gangrenous on its ulcerated surface; of course, the neighbouring parts are progressively brought into a diseased, a scirrhous, state, and constantly dying by gangrene: consequently, the discharge from the ulcerated surface is highly fœtid, and the constitutional sufferings or sympathies are truly afflicting.

There is, however, a disease of the breasts of women much resembling Symphylakesis, particularly in external appearances and impenetrable hardness, of a character and nature very different. It affects the breast during giving suck, and not unfrequently at a remote period of that process, be the age of the subject of it what it may.

The disease I allude to, is Phylakesis; or simply, incarceration of a gland, or a number of glands, by accreted adipose membrane, without vital connexion and associated function being established. It generally terminates favorably, by the incarcerating cysts being brought into a state of gangrene by the constant application of cold, and the glandular substance afterwards running into small distinct abscesses, which heal kindly after a few days: and especially if the woman cease to give suck from that breast.

I have been consulted in a great number of cases of this kind; and have always been able to distinguish them from what is called legitimate cancer, chiefly by the unevenness of surface intimating that it is not any determinate portion of the glandular substance which is diseased, but the whole of it, exhibiting distinct prominences under the skin, without any change of colour of the integuments in the beginning, but increasing in prominence, and gradually acquiring a livid hue, on the external surfaces. Lancinating pains are complained of, resembling those so common in the cancer. I have always employed the same means with the same effect, —success; and shall, therefore, mention what that treatment consists of:—℞. Extract Conij. ʒij.; Aquæ fontan. ℥viij. M ft. Lotio, partibus affectis assidùe applicanda. The bowels to be kept rather open with sulphate of magnesia, or any other cooling aperient. The worst cases of this kind, have got quite well in about six weeks after the cold lotion has been had recourse to.

Now, I consider the disease I have just described, to be precisely the same as the scrofulous glands which prevail in the neck. I repeat, simple incarceration of a gland by its

surrounding accreted adipose substance, and the success I have met with in the treatment of it, in the breasts of women, has naturally led me to the adoption of the same means, when the disease has been resident in other parts of the body. The effects have been similar, though more slow, in progress: that is, the cyst being destroyed by cold, which is easily accomplished either by the means above-mentioned, or by the generation of more intense cold, if necessary, by the evaporation of spirit of wine or alcohol from the surface of the tumor; then the gland will have the opportunity of suppurating and healing, or of being reduced to its natural size by the process of absorption, and the healthy exercise of the neighbouring parts upon it.

But, to return to the disease professedly the subject of this essay, Symphylakesis. When the disease is once formed in early life, it may, and very often does, give little trouble, and is disregarded, and that even for many years; but, at a certain period, in the way already pointed out, it is roused into deleterious energy: it rages with almost uncontrolable fury, and consumes its victims by the extremes of protracted torture. It is a matter of deep interest, then, to discover, at least, what constitutes its real character; and, if possible, to obtain a method of treatment, if not altogether adequate to the removal of the disease, when the knife has been too long rejected, yet capable of mitigating that sum of human misery which is so eminently connected with the cancer.

Viewed in the light I have shewn it, I am persuaded there cannot be any conflicting opinions with respect to the means to be had recourse to, when the disease is once known to be instituted. It appears, from what has been stated, that it commences with inflammation of a gland, and a portion of the adipose membrane immediately investing it; that the primary disease, in the act of retiring, by one of those natural processes by which it is known to retire—adhesion, leaves a morbid connexion and adscititious function, set up between the two substances implicated in the disease; and this latter is a secondary affection, the offspring of a primary one, remaining after its parent has ceased to be. Now, there is no means, with which I am acquainted, which can be employed with any reasonable prospect of overcoming this morbid connexion and function, and of averting that misery of which it is the precursor, excepting the actual separation* of one of the morbidly-united parts from the other, or the total removal of them altogether from surrounding healthy parts.

The first of these operations appears, from what has been said, to be next to impossible; and, indeed, were it accom-

plishable, there is no certain test by which it can be ascertained that it is actually effected: and the very nature of the disease points out, what daily observation fully confirms, that any operation, not extended beyond the limits of the diseased solids, will but accelerate the progress of the malady, and aggravate the sufferings of the subject of it. An attempt, then, to effectually and certainly separate the two accreted solids, must yield to the less painful, but more decided and efficacious, operation, of the total separation of the diseased parts altogether from those which are healthy.

Certain various opinions have been advanced by the advocates for the operation last-mentioned, respecting the proper period of the disease for the performance of it. A review of the process by which the disease is originally formed, and by which also it makes its progress through all its stages, will, I am inclined to believe, reconcile any conflicting opinions which prevail, perhaps at the present time, on that question. I would, therefore, recommend a steady and careful examination of the doctrine I have promulgated respecting the nature of the cancer; and, if it be found to be built upon solid and just principles, it will unite all in one consolidated opinion, that the most proper time to perform the operation is, so soon as the morbid process, Symphylakesis, is known to be set up: For what can be the use of delay, when the progress of the disease is identically the same process as that which first formed it, namely, accretion?

A supposition that the cancer was produced by a peculiar poison, would naturally lead to, and in some degree justify, the conclusion, that the operation ought to be delayed until it could, with some degree of precision, be ascertained how far the poison had extended its influence; and, therefore, to what limits the operation should be carried. This, however, is not strictly correct; for, if the disease makes progress by the extension of poison, there cannot be any greater certainty respecting the distance it has extended to, after many years' delay, than there was when the disease was first discovered. And so also it is, if the accreting process be admitted as the basis of the cancer, I cannot perceive what advantage can be obtained from delaying the operation any longer than till its true character is understood.

Various methods of treatment have been recommended, approved, adopted; and all, in their turns, rejected: and those, even now applauded, will probably share the same fate, excepting, however, those which have for their bases the total removal of the diseased parts from those which are sound.

The comparative merits of the knife and the caustic are pretty fully determined, and properly in favour of the former; therefore, it is unnecessary for me to dwell upon that subject. I would, however, throw into the scale an observation, which strikes me as being of some practical importance. As the parent of the disease, (that is, the primary affection which produced it as one of its offspring,) was *inflammation* resolving by accretion; that, so long as a certain tone of inflammation continues, the accretion will extend, but no longer. Hence it is that, when the disease is formed in early life, it remains passive until the approach of old age; unless, by some casual circumstance, a new accession of inflammation should be provoked. But, let it be remembered, that, at an advanced period of life, the function of the glandular substance of the breast must be abolished, and that by the removal of the glandular substance, by an animal process retrogressive, which first deposited it. This process, although fully adequate to the removal of the healthy substance, cannot be so successful with an association of solids with unnatural function, which constitutes the scirrhus: the attempt, however, has the power, and indeed constantly the effect, of provoking the diseased association into diseased energy; into a slight tone of inflammation; under which state, and under that state only, can the accreting process make advances: consequently, it is only under an inflammatory action that the disease called scirrhus, or cancer, can make any progress.

How plain is it, then, that the primary disease is inflammation; that the secondary affection, is a morbid animal process, set up in the resolution of inflammation; that the progress of the cancer is inflammatory; and that the subject of it is, such portion of the associated glandular and adipose substances by morbid accretion, which cannot be removed by the ordinary animal processes, before the approach of the final cessation of the menses. Not that it is supposed that the scirrhus cannot be brought into an inveterate and ulcerated state before the period of life just alluded to: it often is; nor is it at all more surprising, that the removal of the glandular substance of the breast is sometimes attempted, and even accomplished, in the most vigorous and healthy periods of life: And let me ask, are not these concomitant and simultaneous in all cases where the scirrhus is roused into deleterious energy in early life?

The following inference is deduced from the foregoing premises: that the disease, called cancer, in the breasts of women, is morbid accretion; and the precise subjects of it, are those portions of the breast which cannot be removed by

a natural process, at the approach of old age, in common with the sound parts, in consequence of their morbid change of structure and function, effected by the process of accretion.

Innumerable, almost, are the articles of the materia medica, and other substances, which are comprehended in the catalogue of specific remedies or antidotes; that is, those which have the property of destroying, or of expelling, the cancerous poison: and some of them have a most deleterious tendency, such as arsenic, oxydes of hydrargyrus, cicuta, &c. &c. These, and others of no less powerful action on the living animal solids, and, consequently, capable of altering the state of the animal and vital actions, may be tried with safety, under the immediate superintendance of a skilful director; but, the moment he proclaims his success, though that is only delusive, the ignorant will not fail to imitate him, and endeavour to surpass him by venturing to employ the remedy with greater force and frequency (perhaps to the destruction of the deluded patient) than the original recommender dared himself to have done.

The point, I believe, is pretty well settled, respecting a specific virus being the cause and production of the cancer; and that of its hereditary character, appears fast retiring into the back-ground of popular opinion. But, how much soever be our acquirement of the knowledge of the real nature of the cancer, little has been discovered of late years which holds up a distant hope of pointing out any remedy, excepting that of removing the diseased from the sound parts.

Many years ago, when Mr. Howard was surgeon, and Dr. H. Vaughan (now Sir Henry Halford) physician, if I mistake not, to the Middlesex Hospital, and had principally the direction of the treatment of cancerous patients, for the reception of which one of the wards of the hospital was appropriated, I had several communications with Sir Henry. I believe, I sent him the history of several cases supposed to be cancerous, and deemed such by his father, then an eminent physician at Leicester, as well as by others of the profession, which yielded to the external application of a cold cicuta lotion.* And I must add, that the diseases to which the lotion had been successfully applied, were of the character which I have fully described;† and to which, when I had distinguished it from the cancerous scirrhus, and had obtained the means of always correctly distinguishing them, I gave the name of *Scirrhus suppurans;* shewing its

* Vide page 473. † Ibid.

resemblance to the cancerous scirrhus in hardness and want of sensibility, but differing from it in its progress and mode of termination. Professing now, however, to denominate diseases from their identities, I have given it the appellation *Phylakesis*.

I shall here take the liberty of introducing a case in point. Mrs. Hubbard, of Countesthorpe, about seven miles from Leicester, a healthy young woman, in an early period of suckling her first child, was attacked with a disease in her breast, which increased in extent, though not in pain, becoming daily harder under the application of poultices and other topical applications, chiefly recommended by her neighbours. At length, finding no benefit, she became apprehensive of evil consequences, and consulted a physician at Leicester. After the application of leeches, and the use of aperients, &c. for some time, the Doctor declared it to be a cancer, recommending, as the only certain remedy, the total removal of the breast. The patient consented: lodgings were provided in Leicester, a surgeon fixed upon to perform the operation, and the time appointed. In the meantime, Mrs. Hubbard called upon a lady in Leicester, who, she heard, had undergone an operation similar to that which she was about to submit to: indeed, I performed it. The lady advised her to consult me, previous to being operated upon: she did so, and I immediately discovered it to be phylakesis, not symphylakesis. I declared my opinion, and proposed a consultation with the Doctor; to which he objected, on the alleged grounds that there could not be two opinions on the case. The patient, however, put off the operation, and placed herself under my care. I, of course, employed the means I have described; and the event was, she recovered in the way and manner as all other such like diseases have done.

Pressure, as a remedy for the removal of the cancerous scirrhus, has obtained some fashion; and, perhaps, when it can be employed so as to embrace the whole of the diseased parts, and completely cut off all their connexion with the sound ones, and at once destroy the function of diseased solids, it might be successful; and yet not so formidable an operation as that by the knife; and would, in many instances, obtain a preference. But, if it fall short of so much efficiency, I should really be under serious apprehension that it would prove an accelerator of the disease, by exciting inflammation.

I may, however, venture a suggestion, with which I shall conclude this paper. Reduce the general animal and vital actions very low; and then destroy the diseased parts by

intense cold, so long continued as to prevent re-action, which may be accomplished by the evaporation of alcohol from the surface.

20, *Falcon-square; Jan.* 12, 1819.

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*For the London Medical and Physical Journal.*

*An Account of some extraordinary Effects arising from a Sting of a Wasp;* by CHIRURGUS.

MR. A., aged 40, in the month of August last, was stung in the middle-finger of the right hand by a wasp, which deprived him of all sense and power of muscular action. He felt, at the instant, as if he had been pierced at every joint by a sharp instrument; or, more properly, it conveyed to his mind a sensation like the shock of electricity, though attended with much more acute pain. His hand, arm, face, and head, became very much swoln; the eyes were suffused with blood, so much so, that the tunicæ adnatæ were as red as in acute ophthalmia; and he complained of intense smarting and itching pain in them. The course of the absorbents of the arm could be traced by red lines; and he was also tormented by a very distressing itching all over his body. After the lapse of ten minutes from the receipt of the accident, I was called to him, and found him in a state of total insensibilty, except that he was occasionally roused by the action of the stomach to vomit; and then immediately relapsed into the same state, expressing a strong desire to lie down and sleep. The action of the heart was extremely feeble, and the pulse at the wrist scarcely perceptible. I thought it improper that he should be permitted to sleep; and taking an arm myself, and giving the other to an attendant, we walked, or rather dragged, him about, for three-quarters of an hour, when he gradually recovered. As soon as he could swallow, I gave him some of the volatile alkali. The hand and arm, however, remained swoln and painful; and he complained of much languor and uncomfortable feelings for many days.

I never met with such severe symptoms from the sting of a wasp; and, upon enquiry of many of my medical friends, they assure me of the same.

I must also mention, I was lately called to another person under nearly similar circumstances; but the symptoms were not quite so violent.

Mr. A. was stung about five years ago, when the like effects took place, though they were not then so severe.

*Twickenham; Oct.* 3, 1818.

# COLLECTANEA MEDICA,

CONSISTING OF

## ANECDOTES, FACTS, EXTRACTS, ILLUSTRATIONS, QUERIES, SUGGESTIONS, &c.

RELATING TO THE

*History or the Art of Medicine, and the Auxiliary Sciences.*

Quicquid agunt medici,
nostri farrago libelli.

### *Anatomico-Physiological Examination of the Medicinal Leech;* by Henry Lebrecht Kurzmann, M.D. Physician to his Majesty the King of Prussia, &c.

*(Concluded from p. 403.)*

THE author had several opportunities to observe the leech while in the act of copulation. They had their tails fixed by suction to the sides of the glass jar, and hung downwards, their bellies twisted around each other. One of them had fastened itself with its mouth to the other, whose head was hanging down. On the bodies being turned a little aside, in the genital regions, the penis of the one was plainly seen to pass, in a spiral form, round that of the other, and then each to enter into the opening of the opposite uterus. Propagation could not, however, be observed; both dying soon after. This act may be still more plainly observed in the horse-leech. Whether the leech belongs to the oviparous or viviparous, cannot be decided with any certainty: Dr. K., however, is in favour of the latter opinion; as, in the glass jars in which they were kept, he perceived, at different seasons, a number of little ones, which always made their appearance so suddenly, that the day before not the least traces were found; and, besides, the water had been frequently renewed, so that their development from eggs could not be supposed.

On each side of the belly fifteen particles are situated in rows, one behind the other; the first close behind the œsophagus, and the last not far from the tail: partly in the same direction with the round substances belonging to the testicles, and partly outwards. Each of these apparently-glandular particles consists of a single closed cylinder, which is finely winding and partly bending itself, whilst the other end is attached in the front and on the sides to the skin of the belly. In young leeches, each of them has scarce the length of a line, is of a white colour, perfectly cartilaginous and smooth; sometimes also covered with a membrane; and erects itself with considerable elasticity, on being irritated with the point of a knife. In old leeches it appears reddish, softer, ser-

pentine, and shows but a trifling erection. The function of this, organ is as yet unknown.

The organs of respiration of the leech, or the tracheæ, are flat, round, skinny, vesicles, situated beneath the intestinal canal, sixteen on each side, lying, at equal distances from each other, between the above-described particles; having somewhat more than a line in diameter, and consisting of a fine, white skin, externally, and a somewhat stouter one internally. Each vesicle is overspread by a close vascular texture, which, though the vesicles themselves stand in no connexion among themselves, is connected with those of the others. The exterior openings appear, on the belly-side, as small membranous spots. The vesicles mostly contain a proportionable quantity of a white fluid, which is miscible with water. Mercury introduced into these vesicles, neither proceeding, nor being capable of being forced back, through the external opening, it is supposed that these openings are provided with valves. As the leech, to all appearance, respires in the same manner as fishes do, and of course water enters the vesicles, where it remains till the air contained in it is decomposed, it is very probable, that the leech then opens these valves to let the water run out. The respiratory organs, therefore, deserve rather the appellation of gill-bags, than that of tracheæ.

The vascular system of the leech does not take its origin from one central point, but consists of three apparently separate vessels, one running along the back, and two on each side; all of them of equal strength, and consisting of a very thin, transparent membrane. If an hungry leech, void of blood, is killed by means of alcohol, their course and ramifications become visible, the reddish fluid contained in them congealing into a wax-like mass by this process; and, on opening the moderately extended leech some hours after, the vascular system, and its branches, are seen as if injected with wax. The vessel on the back begins directly behind the teeth, runs along the back part of the œsophagus, the intestinal canal, and the rectum, to the anus, closely adhering everywhere, to an equal degree, with the parts lying underneath; and small vessels, answering to the divisions of the stomach, are branching off on both sides.

The two side-vessels also run on both sides in a straight direction from the fore-part backwards, on the outside and along the gill-bags, and on the fore-part in three or five thin branches, that lose themselves in the skin, and anastomize with those of the opposite side. Though no fluid can be propelled from the side-vessels into that of the back, Dr. K. is nevertheless of opinion, that there is a connexion betwixt them, but that, on account of the fineness of the vessels, it cannot be ocularly demonstrated. In all these three vessels a pulsation is observed, though in that of the back it is less distinct, on account of its closer consolidation with the adjoining part: ten or thirteen of these pulsations may be counted in a minute. The manner of the circulation may be best observed in the common leech (hirudo vulgaris), in which, on account of its

transparency, the interior parts can be seen in a bright sunshine. The circulation does not take place from one end to the other, but from side to side. When one of the side-vessels is distended with blood, that on the opposite side is quite empty; on the former's contracting itself, the round particles of that side fill themselves, then the vessel on the back, the parts of generation, the round particles of the opposite side, and lastly, the other side-vessel; which replenishes itself, till all the other parts from whence the blood proceeded are void: from hence the blood now returns in the same manner to the opposite side. This reciprocal voiding and filling proceeds very slowly, ten or twelve times in a minute at the utmost; and, under the want of influence of the open air, or in stagnant water, still slower; and immediately ceases awhile, on the leech being squeezed or otherwise irritated.

Along the belly, just in the middle towards the back, and under the stomach, coeca, and rectum, runs the principal nerve of the leech, from the head down to the foot. It constitutes a black string, everywhere of the same breadth, on which white spots, constituting the ganglia, are observable, standing at equal distances from each other, making the string a little broader. The sheath of this nerve consists of a simple, firm, membrane, the colour of which appears to be black; but is seen to be brownish-yellow, closely covered with black streaks, when inspected through the glass. These streaks disappear some days after death, and the sheath assumes a whitish-grey colour. Over the ganglion it is, on account of its greater distension in breadth, more closely expanded, and the former appears white through it. On cutting the sheath open, the ganglion presses forward; and, with some caution, the sheath may be stripped from the nerve. The proper nerve is as strong as an ordinary human hair, of a whitish-yellow colour, almost as firm as a sinew, and very elastic; so that it always preserves a straight line, even when the animal contracts itself to half its usual length; but, on its shortening itself still further, it forms slight serpentine windings towards the sides. It may easily be divided in threads, but the ganglion forms an indivisible whole. The nerve in general is rather dry than moist, has twenty-three ganglia, and from these alone are branches issuing forth. The first ganglion, situated over the œsophagus, is small and roundish, sending forth two branches to both sides of the upper-lip, perhaps to what is called the eyes; and two stouter ones backwards, one of which bends to the right, and the other to the left side, of the fore-part of the œsophagus, round that part situated close under the rows of teeth, and then runs below to the belly-side. Here both branches join again in the second ganglion, which is larger, and of a triangular shape. The third ganglion has its situation immediately behind the former, and sends forth on each side a pretty strong branch toward the œsophagus. From the fourth to the nineteenth ganglion, they stand at almost an equal distance from each other, each of them sending forth two branches forward, and two stouter ones backward, in the form of an X; the former passing into the skin of the belly, and the latter into the stomach.

The back branches of the seventh ganglion pass to the testicles. The nervous chord, passing on from this ganglion backwards, bends over the spermatic chord of the right testicle, but directly after joins again the muscular coat. The chord passing from the eighth to the ninth ganglion, divides itself directly after into two branches, surrounding the uterus, without sending to it any branches. From the nineteenth ganglion onwards, they approach each other more and more, so that the twenty-third almost stands in contact with the twenty-second.

The nervous sensibility stands in the leech on a very low scale; the nerve shewing no mark of it, either on being touched with dilated acids, pricked with pins, or touched with a hot needle. Dr. K. cut a leech, fastened at both ends, in such a manner that a connexion existed only between the two halves by means of the nerve, which was uninjured, but deprived of its sheath: the halves directly contracted themselves towards their fastened points, whereby the nerve, and three of its ganglia, were exposed to view. A weak galvanic irritation did, likewise, not produce any alteration. A pile of twenty pair of plates being brought into contact, at both poles, with the nerve and back, or nerve and belly, or either end, produced a slight contracting motion; which became stronger on touching the nerve, and the base of the wound. The touching of the nerve and upper-lip produced a strong retraction of the head; that of the nerve and tail, a strong retraction of the latter; that of the two divided halves, either on the back or belly, strong motions; and, lastly, that of the upper-lip and tail, the most sudden contraction of both halves took place. A leech, prepared in the above-mentioned manner, of which a piece of the muscular coat of the head was deprived of its epidermis, being touched at the bare place and the nerve, or tail, exhibited moderate contractions; stronger ones, on the bare place being touched along with the skin; and still stronger ones, on touching the bare place and upper-lip. A pile of ten pair of plates, did not produce any strong effect upon a living, unprepared leech. One of twenty pair had not any effect, on touching the body with both poles; touching the body and the upper-lip, produced a sudden removal of the same; of the body and foot, a quick removal of the latter; of the upper-lip and the foot, a remarkable quick contraction, and a vomiting of the blood it contained.

To learn which is the immediate influence of the nerve upon the leech, the nerve was taken out, in its whole length, without any of the other viscera being injured, and the leech replaced into the water; when it died in a few hours after. In another leech, a piece of the nerve, with two ganglia, towards the foot, was cut out; in consequence of which, the lower, and below the cut, was paralyzed. The foot gradually recovered some strength, but not its former degree; and the leech died within a few weeks. The leech shews the highest degree of sensibility at the head and foot; in which places the faculty of feeling, the only sense it is possessed of, appears.

The trifling degree of susceptibility of the nervous system of the leech, lets us suppose, that, in the same manner as we perceive a scale in the gradual development of the animal creation, a similar one must be discoverable with respect to the susceptibility for external influences; and a discovery like this would certainly be of great importance for natural history.

The nervous system seems also to act a part in the movement of the leech. The high degree of elasticity of the nerve, in a living condition, whereby it approaches to the nature of a tendon; its being enclosed in a firm, tendinous canal; and the chief spreading of its branches towards the belly; adapt it particularly for it in contractions: and it appears, that all the movements of the leech, notwithstanding its muscles being of equal situation and condition throughout the whole circumference of its body, always determine themselves towards the belly or the sides, according to the situation of the nervous chord and its branches. In the strongest contraction of the leech, a hollow is perceivable along the belly, according to the situation of the nerve, which can only be produced by the contraction of the muscles towards this point; which tendency, as the muscular parts themselves do not go thither, is only to be ascribed to the nerve. Also, in endeavouring to extend a contracted leech, the force of contraction is found to be very strong towards the belly; and, on the contrary, but trifling towards the back.

The vital power of the leech is exceedingly great. On cutting it across, both halves live for weeks, and even months, with an equal vivacity. The skin of the wounds turn inwards, whereby they become smaller, and sometimes actually cicatrize; but, if cut lengthways, both parts die within a few hours. The leeches live in the water, though confined for several years. They live for several days, if put in oil. Alcohol kills them in a few minutes; hot water, instantly; and rose-water, in a few hours. Frost kills them, though the leeches themselves were not frozen, but soft. Its sensibility, by which it is said to predict the change of weather, Dr. K. found not verified. The abode of the leech is in fish-ponds, swamps, ditches, and, in general, stagnant waters; but it never, except by chance, is found in running water. They are caught, in warm sunny days, in calms, or a gentle southerly breeze, when they come up to the surface of the water, on stirring up the swamps, or moving the aquatic plants to which they fasten themselves. Rain-water serves best to preserve them in. A temperate place, which is not exposed to the sun, must be chosen for the stand of the jars containing them. It is not necessary to change the water very often; on the contrary, the change of temperature, unavoidable on those occasions, seems rather to be the cause of their dying sooner. Dr. K. kept leeches alive longer than three years, without ever giving them fresh water during the whole period; except when, on its being too much evaporated, he added some fresh to it: nay, he even has purposely left the dead leeches to putrify in the jar, without its seeming to be detrimental to the living ones.

**_Some Observations on the Opinions of the Ancients respecting Contagion._ By G. D. Yeats, M.D. Fellow of the Royal College of Physicians, &c. (From the _Journal of the Royal Institution_, No. xiii.)**

An opinion having been promulgated, that the antients disbelieved in the doctrine that fevers were contagious,—that is, that the disease was propagated from one individual to another by contact,—it appeared to me a matter, at least, of curious, if not of useful, research, to enquire how far this opinion was founded in truth. They who will take the trouble to turn over the pages of the ancient historians and poets, will soon find that the description of fevers, both by medical and historic writers, clearly shews that it was the generally-received opinion, that human bodies conveyed to each other febrile infection of a highly malignant nature; and further, it is stated, that diseases were propagated by contagion and infection from brutes to the human race. It would be a matter of grammatical hypercriticism to give the etymology of the word contagion, which, of itself, as so closely connected with its Latin derivation, is sufficient to shew what was the idea entertained of the mode by which some diseases were conveyed from one individual to another. It will not be necessary to look into histories more early than that of Thucydides, although it is related that, after the destruction of Troy, a pestilential disease raged in Greece and the neighbouring countries of Asia; and Herodotus attributes it to the miseries consequent to, and connected with, the Trojan war.

In the second year of the Peloponnesian war, which scourged Greece for twenty-seven years, and which commenced about four hundred years before the Christian æra, a raging pestilence broke out in Athens. An invading army of sixty thousand men covered the beautiful plains of Attica, and compelled thousands of the inhabitants to seek protection within the walls of the already populous and crowded cities; thus generating and increasing, by a pollution of the air in confined habitations, pestilential disease: accordingly, as Thucydides says, ἡ νόσος επενείματο δε Ἀθήνας μὲν μάλιϛα, ἔπειτα δε και των ἄλλων χωρίων τὰ πολυ ανθρωπότατα.—*Thucydid. Hist.* lib. ii. p. 134. Francofurti, 1594.

"This pestilent disease raged chiefly at Athens, and also in other places where the inhabitants were the most crowded. Diodorus Siculus, in his account of the same pestilence, declares the opinion that the disease arose in consequence of the unusual crowded state of Athens—οἱ δ' Ἀθηναῖοι πάρατάξασθαι μεν οὐκ ετολμων, συνεχόμενοι δ' ἐντὸς των τειχων, ἐνέπεσον εἰς λοιμικὴν περίϛασιν. πὸλλȣ γαρ πλήθους καὶ παντοδαπου συνέῤῥυηκοτος εἰς τὴν πόλιν, διὰ την ϛενοχωρίαν εὐλόγως εἰς νόσους ἔπιπτον, ελκοντες ἀερα διεφθαρμενον.—Lib. xii. p. 101. "The Athenians, not daring to meet the Peloponnesians in open battle on the plain, remained cooped-up within their walls, and caused pestilential effluvia; for, great multitudes of people from all quarters congregating in the city, very readily generated disease by breathing a corrupted air." The eloquent and animated description which Thucydides gives of the symptoms, clearly describes a

fever of the most violent kind. It was attended with such violent thirst and evolution of animal heat, that the miserable sufferers threw themselves into the sea, into ponds, and even into the wells, to quench their thirst and raging heat. The art of the physicians not only was of no avail, but they themselves, and all who approached the sick, were cut off by the contagion:—ἀλλ' αὐτοὶ μάλιϛα ἔθνησκον ὅσω καὶ μάλιϛα προσῄεσαν.—P. 129. Such was the dread created by thus catching the contagion, that people were unwilling to attend the sick; there was a mutual fear of visiting each other; and whole families perished in consequence of want of assistance; and they who braved the danger, from a principleof virtuous affection in attending their sick friends, perished in heaps:—καὶ ὅτι ἕτερος ἀφ' ἑτέρȣ θεραπείας αναπιμπλάμενοι, ωσπερ τα πρόβατα ἔθνησκον· καὶ τὸν πλεῖϛον φθόρον τȣτο ἐνεποίει. εἴτε γὰρ μη θελοιεν δεδιότες ἀλλήλοις προσιέναι, απωλλυντο ἔρημοι, και οἰκιαι πολλαὶ ἐκενώθησαν ἀπορία τȣ θεραπεύσοντος, εἴτε, προσίοιεν, διεφθείροντο.—P. 132. Thus, then, it appears clearly from the account of Thucydides, that the contagion not only spread from one individual to another, but, what is very remarkable, as shewing the belief of the virulence of the disease caught in this way, he adds, that the greatest part of the mortality was produced by this communication of the contagion:—καὶ τὸν πλειϛον φθόρον τȣτο ενεποιει; and, in the popular clamour which was raised against Pericles for involving his country in the destructive Peloponnesian war, he was accused, says Plutarch, of giving more violence to the pestilence which raged at Athens, by keeping the people cooped-up like herds of cattle, to be infected with contagion from one another:—ἀλλ' ἐων ὥσπερ βοσκηματα καθειργμένοις, ἀναπίμπλασθαι φθορᾶς απ' ἀλλήλων.—Plutarch, vita Periclis.

Aristotle, the son of a physician, has, in one or two of his problems, proposed questions for reasons why diseases should be propagated from a diseased person to a sound one who approaches him. So prevalent was the opinion of the contagious nature of pestilential diseases, that he puts it down as a problem:—Διὰ τι ποτε ὁ λοιμὸς μόνη τῶν νωσων μάλιϛα τȣς πλησιαζοντας τοῖς θεραπευομένοις προσαναπίμπλησιν; ἢ ὅτι μόνη των νώσων κοινῆ ἐϛιν ἅπασιν. ὥϛε διὰ τȣτο πᾶσιν επιφερει τον λοιμὸν, ὅσοι φαυλως ἔχοντες πρoϋπάρχȣσι, καὶ λὰρ διὰ τὸ υπεκκαυμα τῆς νοσȣ της παρὰ τῶν θεραπευομενων γεινομένης, ταχέως υπὸ τȣ̃ Πράγματος ἁλίσκονται.—Sect. 1, Prob. vii.

"From what cause does it happen that the plague alone, of all diseases, especially infects those who approach the persons labouring under it? Whether is it that, of all diseases, mankind are more susceptible of it? Therefore, on this account, the plague attacks all who, being of a bad habit, are first seized with it; for, a fomes of the disease being generated in those labouring under it, others are quickly infected with it."

No doubt can possibly be entertained here of the opinion respecting the contagious nature of plague: on the contrary, the opinion is so established and believed, that it is asked why it should be so? It is also not a little curious, that Aristotle should state, that the plague first commences in those who are of a bad habit of body; or, to speak in modern language, he conceived a predis-

position of the constitution rendered the body more susceptible. The constitution, being thus impregnated with disease, generated a fomes, which readily communicated the contagion to another. I take *υπεκκαυμα*, to be very expressive in this way. Thus we have the complete modern doctrine explicit and clear in a single problem of Aristotle,—the susceptible predisposition of the body in taking infection, the generation of a fomes, or infectious principle, readily communicating the disease to others by contact. In the eighth problem of the seventh section, are some more explanations on this point; in which he observes, all are easily affected with such diseases as arise from a corrupted source, such as pestilences; for they who approach such are immediately infected:—ὁ δε πλησιάζων τοιῦτον ἀνάπτει.

In various parts of Diodorus's history, we find accounts of pestilential diseases as they occurred in different parts of the world, particularly among multitudes of people collected together for the purposes of war. A contagious pestilence broke out at Carthage at the time it was invaded by Dionysius, the tyrant of Syracuse. Diodorus, in his account of this pestilence, (the symptoms of which he has described,) particularly points out the infection and fatality produced by approaching the sick:—μετα δε ταῦτα διὰ τε τὸ πληθος των νεκρων και το τοὺς νοσοκομõυντας ὑπὸ τῦ νόσῦ διαρπάζεσθαι, ουδεὶς ετολμα προσιέναι τοῖς κάμνουσι.

"As the mortality caused by the disease was great, and as the attendants upon the sick were cut off by it, no one dared to approach the infected."—Again:

Καὶ γὰρ οἱ τõις κάμνουσι παρεδρεύοντες ἐνέπιπτον εἰς τόν νόσον παντ ες ὥςε δεινὴν εἶναι τὴν συμφορὰν των ἄρρωςούντων, μνδενὸς θέλοντὸς ὑπηρετεῖν τοῖς ἀτυχουσιν, ού γαρ οἱ μηδὲν προσήκοντες ἀλληλους έγκατέλειπον, αλλ αδελφοὶ μὲν αδελφοὶς, φίλοι δὲ τῦς συνήθεις ἠναἰκάζοντο προίεσθαι διὰ τὸν ὑπερ αὑτων φόϐον.

"For all took the disease who had close communication with the sick, so that wretched indeed was the condition of those who were diseased, every one being unwilling to assist them; for, not only they who were not bound by any tie of relationship deserted each other, but brothers and friends were compelled to neglect their nearest relatives and companions, on account of their dread of the contagion."

In various parts of the history of the Romans, by the Halicarnassian historian, we find accounts of pestilential fevers which spread havoc and destruction around; and we not only can discover that these fevers were infectious, by the manner in which they spread, but Dionysius expressly tells us that they who touched, or lived with, persons so diseased, became infected. In the 451st year before the Christian æra, and about 300 after the building of the city, a contagious fever broke out in Rome:—Λοιμικὴ νόσος εἰς τὴν Ρώμην κατέσκηψε, μεγίςη των εκ τῦ προτέρῦ χρόνῦ μνημονευομένων υφ᾽ης οἱ μεν θεράποντες ὀλίγῦ εδεησαν ἅπαντες ἀπολεσθαι, των δὲ ἄλλων πολιτῶν ἀμφὶ τῦς ἡμίσεις μαλιςα διεφθάρησαν, ῦτε των ἰατρὼν ἀρκῦντων ἔτι βοηθεῖν τõις καμάτοις, ὗτε οἰκειών ἢ φίλων τα ναγκᾶια ὑπηρετῦντων οἱ χαρ επικῦρεῖν τᾶις ἑτέρων βῦλόμενοι νόσοις, απτόμενοι τε καματηρων σομάτων, και συνδιαιτώμενοι τὰς αυτὰς ἐκείνοίς νόσῦς μετελαμ-

Caro.—*Dionysii Halicarnassensis Historia.* Oxoniæ, 1704. p. 645.

"The most pestilential disease ever remembered brought destruction upon the city, by which almost all those affording assistance were cut off, and nearly one-half of the other citizens were destroyed; neither were the physicians able to attend effectually the sick, nor the friends and domestics to administer the necessaries; for they who willingly attended others, by touching their diseased bodies, or dwelling with them, were seized with the same malady."

Here we have both contagion and infection clearly stated: the former communicated by touching the diseased bodies, the latter giving disease to those who came within the concentrated sphere of its action. The miserable condition of the city, during the ravages of this pestilence, is pathetically described by Dionysius. The stench from the unburied dead bodies, which were cast into the sewers, on the highways, and into the river, and again thrown by the tide upon its banks, contributed to maintain the disease, by spreading the infection; for such was the desolation, that whole houses were deprived of their inhabitants by death. The contagion was carried into the country, where numbers perished; and the Æqui, the Volsci, and the Sabines, enemies of Rome, desirous of taking advantage of the distresses of the city, by invading it, received the infection, and carried destruction into their own habitations. The yeomanry of the country were either destroyed or paralysed by the febrile infection; the ground remained untilled, and famine was added to pestilence.

Interspersed in various parts of Livy will be found histories of pestilential fevers, the infection of which, it is expressly stated, was spread by contact. About the year 389, A.U.C. a fever of this kind broke out in Rome.

"Grave tempus et fortè annum pestilens erat," says Livy, "urbi agrisque nec hominibus magis quam pecori; et auxere vim morbi terrores populationis, pecoribus agrestibusque in urbem acceptis. Ea colluvies mistorum omnis generis animantium et odore insolito urbanos et agrestem confertim in arcta tecta æstu ac vigiliis angebat, ministeriaque invicem et contagio ipsa vulgabant morbos."—Lib. 3. c. vi. p. 47.

Again, in the account which Livy gives of the fever which broke out among the soldiers during the siege of Syracuse, a siege ever remarkable by the death of Archimedes, it is clearly stated that contact of the sick propagated the disease.

"Accessit et pestilentia, commune malum, quod facile utrorumque animos averteret a belli consiliis, nam tempore autumni et locis naturâ gravibus, multo tamen magis extra urbem quam in urbe intolerandâ vis æstûs per utraque castra omnium fermè corpora movit, et primo temporis ac loci vitio et ægri erant et moriebantur, postea curatio ipsa et contactus ægrorum vulgabat morbos; ut aut neglecti desertique, qui incidissent, moriuntur aut assidentes curantesque eâdem vi morbi repletos secum traherent."—Lib. xxv. c. 26. Carthaginians, Romans, Sicilians, all fell victims to the disease.

So prevalent, indeed, was the opinion of the contagious nature of pestilential fever or plague, that we find in medical writings, when the authors wish to represent the infectious nature of disease, they compare it to the plague. Thus Aretæus, one of our best and most accurate professional writers, in giving an account of the nature of Elephantiasis, and wishing strongly to impress on his readers the idea of its highly-contagious nature, says,—ἀτερπὲς μεν και φοβερὸν, θηρίȣ γαρ ἰδέν, δεος δὲ ξυμβιȣ̃ντε και ξυνδιαιτᾶσθαι, ȣ μεῖον ἢ λοιμῷ· αναπνοῆς γαρ ες μετάδοσιν, ῥηΐδιη βαφή.—Θεραπεια Ελεφαντος.

"It is a terrible and unsightly disease, putting on the appearance of the beast: there is great danger, too, in taking food with one so diseased, as much as with one afflicted with the plague; for the infection is readily caught by a reciprocity in respiration."

Galen, too, in his first book, chapter iii. *De Febribus*, not only alludes to, but directly asserts, the contagious nature of the plague; for he says, in strong language, there are none, possessing any understanding, who do not know that a pestilential condition of the air will produce fevers; as also that it is very imprudent to have any direct communication with those afflicted with the plague, on account of the danger of catching it, in like manner as in the itch or inflammation of the eyes:—κὰι μεν δὲ κὰι ὅτι λοιμώδεις ἀέρος κατάςις ηνεγκε πυρετον, ȣδὲ τȣ̃το αγνοȣ̃σιν, οις μέτεςι συνεσεως· ωσπερ γε καὶ ὅτι συνδιατρίβειν τοῖς λοιμωτοισιν ἐπισφαλέϛ απολαυσαι γαρ κίνδυνος ὥσπερ ψώρας τινός ἢ οφθαλμιας.

It may not be incurious to remark here, that ophthalmia is said to be contagious; and Aristotle asserts the same thing, in the eighth problem of the seventh section. What is the reason, he says, that they who have close intercourse with persons labouring under the itch, or ophthalmia, are seized with it?—Διὰ τί απὸ φθίσεως και ὀφθαλμιάς και ψώρας οι πλησιάζοντες ἁλίσκονται.

The public are well acquainted with the discussion which has taken place respecting the contagion of that species of ophthalmia which so sorely afflicted our army in Egypt.

In the sixth chapter of the fourteenth book of the history of Ammianus Marcellinus, where he describes the vices of the people of Rome, he alludes to a disease of a highly-infectious nature, at a period of time about 353 years after the birth of our Saviour. It appears to me to be almost impossible to say what the disease was; but it is sufficient to state, that the account describes it to be so exceedingly infectious, that the servants sent to enquire after those who were ill, were ordered to undergo purification before they returned home:—"Et quoniam apud eos, ut in capite mundi, morborum acerbitates celsius dominantur; ad quos vel sedandos omnis professio medendi torpescit: excogitatum est adminiculum sospitale, ne quis, amicum perferentem similia, videat: additumque est cautionibus paucis remedium aliud satis validum, ut famulos percontatum missos quemadmodum valeant noti hâc ægritudine conligati, non ante recipiant domi, quam lavacro purgaverint corpus. Ita etiam alienis oculis visa metuitur labes." Here, we have not only the dread of contagion being communicated from

one individual to another, but precautions were taken to prevent the infection being carried by the clothes or person of a second individual to a third. Whatever particular condition or nature of disease "labes" may be supposed to mean, it is, nevertheless, perfectly clear, that an infectious principle, communicable through the medium of another, was feared and avoided. Ammianus, however, in the fourth chapter of the ninth book, describing a pestilence which raged at Armida in Mesopotamia, when it was besieged by Sapor king of Persia, A.D. 359, and in giving the different opinions which were held respecting the origin of pestilential diseases, makes the following observations, in which "labes" is evidently used as disease:—"Adfirmant etiam aliqui, terrarum halitu densiore crassatum aera emittendis corporis spiraminibus resistentem, necare nonnullos: quâ causâ animalia præter homines cætera jugiter prona, Homero auctore, et experimentis deinceps multis cum talis incesserit labes, ante novimus interire."

To the facts which have been adduced from medical and historical writers respecting contagion, may be added the descriptions and opinions of the poets. The classical reader will feel a pleasing interest in bringing to his recollection the readings of his earlier days; and will, therefore, be gratified by the perusal of quotations from the writings of those authors whom he has probably often had in his hand. In the beautiful description, from the first eclogue of Virgil, where he characterizes himself under the name of Tityrus, and the Mantuans under that of Melibœus, (who had been spoiled of their lands to enrich the followers of Augustus,) the latter thus addresses him:

Non insueta graves tentabunt pabula fœtas;
Nec mala vicini pecoris contagia lædent.

Thus, as on a subject well known, Melibœus congratulates Tityrus that his cattle will not be exposed to the contagion of a neighbouring herd; as, by the interest he had, through Mecænas, with Augustus, he was permitted to retain his Mantuan property, and was not, therefore, obliged to remove his flocks to other and untried pasturage. In the third book of the Georgics, Virgil is still more explicit and clear respecting the contagious nature of disease in cattle; for he describes the symptoms of one becoming ill, and desires it may be immediately attended to:

Prius quam
Dira per incautum serpant contagia vulgus.

The other Roman poets of nearly the same period, are equally descriptive and explicit in their accounts of pestilential diseases, as propagated by contagion, as we read in the pages of Lucretius, Ovid, Lucan, and Silius Italicus. I cannot avoid the pleasure of quoting, from the two former at least, their highly-poetical descriptions. Lucretius, in his beautiful account of pestilential fever, unquestionably taken from the historical statement of Thucydides, evidently describes its infectious nature. Its malignancy and rapid propagation from one individual to another, by contagion, are unequivocally stated:

Quippe etenim nullo cessabant tempore apisci
Ex aliis alios avidi contagia morbi.
Lanigeras tanquam pecudes et bucera sècla;
Nam quicunque suos fugitabant visere ad ægros,
Vitai nimium cupidi mortisque timentes
Pœnibat paullo post turpi morte malâque,
Desertos, opis expertis incuria mactans,
Qui fuerant autem præsto, contagibus ibant.

Ovid, in the seventh book of his Metamorphoses, gives an animated and highly-poetical account of the plague which raged in the island of Ægina; and we find the symptoms and calamitous circumstances attending the disease, similar to those as described by the masterly pen of Thucydides. We must therefore conclude, that it is either a fiction of the poet's, as a copyist, or an account of a disease, similar to the Athenian pestilence, as it occurred in an island of the Grecian Archipelago. However that may be, the idea of the contagious nature of the pestilence is determined and unequivocal, clearly shewing, that the poet is stating an opinion generally received in his, and the preceding, times. After describing the calamitous havoc caused by the spreading of the disease, the fields and roads being strewed with the bodies of the dead, the air corrupted with the effluvia of the putrefaction, he adds, the contagion is thus spread far and wide:

* dilapsa liquescunt;
Afflatuque nocent et agunt contagia latè.

Human aid is of no avail; for the faithful attendant, in his solicitous care of the sick, by a near approach, catches the contagion, and is thereby hastily hurried to his grave:

Nec moderator adest: inque ipsos sæva medentes
Erumpit clades, obsuntque autoribus artes;
Quo proprior quisque est, servitque fidelius ægro
In partem lethi citius venit.

Instead, then, of having any doubts on the opinions of the ancients, respecting the propagation of disease by contagion and infection, we have ample proof, from the writings of their philosophers, physicians, and poets, not only of the existence of such an opinion, but of precautions taken to prevent the spreading of the infection. In the reading, however, which I have gone through, I do not recollect to have met with a passage describing any strictly precautionary means, except in Ammianus Marcellinus. I am, nevertheless, inclined to believe that, by a deeper perusal of the ancient Greek and Roman authors, we should find that methods were adopted for preventing the communication of contagious miasma; not, however, with that philosophical accuracy and success which the improvements in modern science have produced. Many works, besides those I have read, remain to be examined, as well as a more critical perusal of them; but what I did read, was so much to the point, and so satisfactory, that it was unnecessary to proceed further.

* Scilicet Corpora.

# CRITICAL ANALYSIS

## OF RECENT PUBLICATIONS,

IN THE

## DIFFERENT BRANCHES OF MEDICINE, SURGERY, &c.

*Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland.* Vol. II.—8vo. pp. 602.

(*Continued from p. 424.*)

XVI.—*Observations on Varix and Venous Inflammation; with Instructions for operating, with Safety to the Femoral Vein, in Popliteal Aneurism.* By RICHARD CARMICHAEL, M.R.I.A. one of the Surgeons of the Richmond Hospital, House of Industry, &c.

THIS memoir commences with the history of a case, the subject of which was a healthy young man, where the vena saphena was tied for a varicose state of the veins of the leg, with an ulcer situated above the inner ankle, which terminated fatally: (of this, however, there was not absolute certainty; since the patient was taken away from the hospital, by his friends, when apparently dying.) In addition to the fever, and other consequences of inflammation of the vein, "four or five tumors formed on different parts of his body; on his hips, shoulders, and breast, which quickly suppurated: some of these I punctured, as soon as a fluctuation was evident, and the integuments discoloured. About an ounce, or an ounce and a half, of healthy-looking matter, was discharged from each tumor; but it was fœtid, and attended, at the same time, with a disengagement of some very offensive gas, which bubbled through the matter."

The only case on record, in which similar phenomena were observed, Mr. Carmichael remarks, is one (the 49th) related by Mr. HODGSON:

"Mr. HUNTER," says Mr. Carmichael, "was the first to call the attention of the profession to the occurrence of inflammation of the veins, which he attributes chiefly to inattention in closing the orifice of a vein after phlebotomy. Before the publication of his observations on the subject,* the untoward symptoms, which

* See *Transactions of a Society for the improvement of Medical and Surgical Knowledge*, page 18, vol. i.

sometimes occurred after venæsection were, in general, attributed to a wound of the tendon of the biceps muscle."

Unless we go back to ARETÆUS, who treats of inflammation of the vena cava, and the symptoms that ensue from it, (*De Causis et Sign. acut. Morb.* cap. viii. l. 2,) this pathological phenomenon appears to have been overlooked, or mistaken, by the predecessors of our great physiologist; and, although observations on this subject, have been published by several eminent practitioners of surgery, as SASSE, MECKEL, OSIANDER, REIL, FRANCK, MARJOLIN, BICHAT, DELPECH, HODGSON, HOME, ABERNETHY, CHARLES BELL, BRODIE, HENNEN, TRAVERS, and BRESCHET, it is yet so imperfectly understood, that we seize with avidity any useful addition to our knowledge respecting so serious a malady.

Inflammation of the veins is believed, by Mr. Carmichael, to be of more frequent occurrence than is generally imagined; and he thinks that many lives are annually lost from this cause alone, even when its existence has not been suspected.

"Now that blood-letting is so generally practised in every description of fever," he continues to remark, "it is incumbent upon practitioners to be aware, that a train of symptoms, strongly resembling those of typhus, may arise from venous inflammation, and from which it is difficult to distinguish it; except, indeed, the inflammation of the orifice, and the pain and tenderness along the course of the vessel, may lead to a true diagnosis. In extensive wounds, or surgical operations, I believe it to be a still more common, but unheeded, cause of death; and the following case will afford a convincing elucidation of this remark."

Our limits oblige us to confine our account to an abstract of the history above alluded to.

James Boyle, æt. 40, was admitted into the Richmond Hospital, on the 20th of May, 1818, on account of a large popliteal aneurism on the right side. On the 25th, Mr. Carmichael tied the femoral artery, immediately above the part where it passes under the sartorius muscle. Some little force was required to pass the needle under the artery; and, as soon as it was accomplished, a gush of venous blood followed, which, in a second or two, spontaneously ceased. On the third day, the wound had apparently healed by the first intention. But, on the fifth day, a small quantity of pus flowed through an opening in the cicatrix. He now began to feel uneasiness: his pulse, the following day, rose to 90. His sleep was disturbed, and his countenance flushed; but he could not point out the particular cause of his uneasiness. June 7th, the thirteenth day from the operation, he had several distinct rigors, followed by increased heat; the discharge from the

wound had augmented in quantity; and the lower part of the leg had become œdematous. He sighed, or rather mourned, frequently; but was still at a loss to point out any seat of pain. On the 8th and 9th, he had strong rigors, followed by profuse perspiration. His face and neck were, in general, of a deep-red colour. His manner evinced great torpor and debility; and, at times, he muttered incoherently to himself: pulse 80; tongue brown. Six ounces of blood were taken from his arm, which exhibited the buffy coat: twelve ounces more were afterwards taken on the same day. Calomel, and cathartic medicines, were given internally. The 10th, no signs of amendment: ten ounces of blood were taken from the arm, which exhibited the buffy appearance. The entire limb was now swoln and œdematous. The 11th, evidently worse: pulse, upwards of 100; tongue, brown and dry; respiration, oppressed and laborious. In the evening, he had hiccough and another rigor; after which, his face, which was hitherto of a deep-red, became pale and ghastly; and he was delirious during the night. Wine was now given to him. The 12th, the pulse 130: the integuments in the ham, covering the tumor, were livid and mortified. An opening was made in them, which set free a quantity of putrid coagulum, the contents of the sac. On the morning of the 13th, he died.

*Examination after death.*—The matter from the wound was found to have proceeded from a small abscess, behind, and on the inner side, of the artery; but, as far as this vessel was concerned, nothing was amiss. The crural vein, lying behind, and in close contact with, the artery where the ligature had been passed, had been wounded by the needle; but no portion of this vessel was included in the ligature. Its interior surface was lined with pus and organized lymph, exhibiting the appearance which membranes present in a suppurating state. This appearance extended downwards to the ham, where it suddenly ceased; but the vein was rendered impervious at this part, by a deposition of coagulated lymph. The disease also extended a considerable way down the saphena: upwards, it was traced as far as the common iliac vein. The dissection could not be carried farther, as the friends of the patient were waiting for the body; and Mr. Carmichael had been obliged to promise, that he would only examine the limb.

Mr. Carmichael, from the accident that occurred in this case, is led to make some remarks on the difficulty of passing a ligature round the femoral artery, without injuring the vein, in consequence of the close contact, and indeed adhesion, of those vessels, from the tendon of the biceps muscle almost to Poupart's ligament. The vein, he is disposed to think, is often wounded in the operation for popliteal aneurism, although inflammation may not be the result. This was found to be the case in a patient who died in consequence of secondary hæmorrhage from the artery, after that operation, which was performed by an expert and able

anatomist. Such an accident has caused at least one death; and probably, others beyond number: to obviate its future occurrence is, therefore, an object of considerable importance.

After some remarks on the directions given by Mr. Hodgson and Professor Scarpa, for the mode of applying the ligature to the femoral artery in this situation, shewing their insufficiency, and want of due precision, on all occasions, Mr. Carmichael proposes that which, he believes, is not liable to similar objections.

"In a middle-sized man," he observes, "the vein begins to emerge from under the artery at five fingers'-breadth, or three inches, beneath a transverse line, ranging with the upper edge of the symphisis pubis; and is fully exposed, at four fingers'-breadth, or two inches and a half, below this line, to admit of being laid bare by dissection, so as to enable the operator to pass the needle with ease and safety between the two vessels. This spot lies considerably below the origin of the profunda and the junction of the saphena with the femoral vein: the latter, after this junction, completely emerges from under the artery; on the pubal side of which it lies in the same plane, until both vessels are concealed from our view by Poupart's ligament.

"If the pulsation of the artery is not so obvious as to direct us where to make our incision, we may err in approaching too near the pubis; and thus, independent of other consequences, embarrass the subsequent steps of the operation, by opening the saphena vein: but this may be avoided, by measuring the distance between the symphisis pubis, and the most anterior point of the spinous process of the ileum. In middle-sized male subjects, this measurement usually gives five inches and a half, and in females half an inch or an inch more: one-half of this measurement, then, brought to a transverse line from the upper edge of the symphisis pubis, will give the exact situation of the ilial side of the artery, at the place where the ligature is to be passed; which is at two inches and a half, or at the most three inches, from this point, along the groin towards the knee. In cutting down upon this spot, we come upon the pubal edge of the sartorius, where that muscle meets the artery; and here we have a strong dense fascia (the fascia lata), extending from the muscle over the vessels; but it is considerably more dense over the latter. This fascia may be divided with safety on the sartorius; and, by pursuing the dissection of it, we expose, first the artery, and then the vein; and, when the vessels are thus sufficiently exposed, we may insinuate between them, with ease, the aneurismal needle, which is to be pushed under, and close to, the artery, without disturbing it from its bed. When the point of the needle appears at the opposite (the ilial) side of the artery, we must satisfy ourselves, before we force it through, if we meet with any obstruction, that it is merely produced by cellular membrane, and is not occasioned by either the

vein, or a branch of the crural nerve (saphenus), which is usually found lying in contact with the ilial side of the artery; and which is, therefore, in great danger of being injured, or included in the ligature."

Mr. Carmichael then relates a case of inflammation of the veins, after amputation of the leg above the knee, which terminated fatally. He refers to Mr. HENNEN's Work on Military Surgery, for similar cases; and is disposed to consider them as of not unfrequent occurrence. A similar remark was made by Mr. Hunter; and a case of this kind is related by Mr. Travers, in his Essay on Inflammation of the Veins. Dr. DENMAN, not long before his death, observed, in conversation, that he suspected that many cases of fever, of a typhous character, in puerperal women, arose from such an affection of the veins of the uterus. This, we consider, is an interesting subject for investigation.

The cases related by Mr. Carmichael made such an impression on his mind, that he

"Never ventured upon the general practice of tying the vena saphena, on account of a varicose state of the veins of the leg; and, until Mr. Brodie's proposition of dividing the branches instead of the trunk, was communicated to the public, I contented myself with merely recommending the use of the laced-stocking, or the application of the roller, with a view to palliate, rather than cure, the complaint."

The remainder of this very valuable memoir is occupied by the relation of the results of the experience of Mr. Carmichael in the practice of Mr. Brodie. Of this we have already given an account, in our last "Historical Sketch of the Progress of Medicine."

XVII.—*Case of incurable Disease of the Arm, arising from extraordinary Circumstances.* By the same.

A case of severe inflammation of the whole arm, arising from several needles having been wilfully driven into different parts of the limb, by the patient herself, apparently with an intention to excite commiseration in some benevolent persons, whom she attempted to deceive by her hypocrisy. The limb was amputated, when the constitution began to sink from fever and diarrhœa; and the life of the patient preserved.

The following is the only pathological observation of particular interest:

"The muscle in which the needles lay was almost changed to a firm, gelatinous, structure; and they were surrounded by firm lymph, almost of the consistence of softened cartilage,

which seems to be the process employed by nature to insulate such extraneous bodies from the surrounding parts, as do not excite suppuration."

XVIII.—*On the Origin of Intestinal Worms, particularly the Ascaris Vermicularis.* By JOHN MILNER BARRY, M.D. Cork.

"The origin of intestinal worms," says Dr. Barry, "has been, for a long time, a fertile source of conjecture, and of difference of opinion, amongst medical writers. Practical writers, indeed, are too much disposed to undervalue enquiries, which are not immediately directed to the cure of the disease; alleging, in this instance, that it is the duty of the physician to expel these troublesome animals, when they are present, without being over-solicitous to ascertain their mode of production. Such reasoning is calculated to check every useful enquiry into nature, and to reduce the medical art to a state of blind empiricism."

The title of this article, and the passage we have transcribed, with which it commences, called forth our most earnest attention, and led us to expect that we should be gratified with some information of importance respecting so interesting a subject. As nothing is more easy than to pass either general praise or censure on a series of opinions, with a certain degree of security from the imputation of erroneous judgment; nor any thing less useful to the cause of science; we shall enter into the consideration of the observations and reflections adduced in this memoir, in a particular manner, before we express any opinion respecting the merits of the whole.

"It has not been satisfactorily proved," says the author, "that any of the species of intestinal worms, which chiefly demand the attention of the physician, has been derived from an external source. The doctrine of equivocal generation is now, however, altogether abandoned by philosophers."

The first of the above propositions, is the admitted truth that gives such a particular degree of interest to this subject; the second, somewhat surprised us, particularly when advanced by a physician of the learning and talents of Dr. Barry; since several naturalists and physiologists, whose opinions are considered, throughout Europe, as deserving of the highest respect on such a subject, continue to favour the doctrine of the equivocal (as it is termed) generation of some species of animals. We could adduce numerous authorities on this point; but the following will, we consider, be sufficient to shew that the question is by no means decided, as Dr. Barry has asserted.

LINK* and REIL advocate it; so did D'OUTREPONT,† a few years since, in a work, shewing great research and accuracy of observation. This hypothesis, with respect to the origin of intestinal worms, was considered equally probable with that attributing it necessarily to ova, by one of the most learned naturalists of the latter part of the last century, RETZ. He thus expressed himself: "Ingenuè fateor unam hypothesim non minus obscuram esse quam alteram; fateor etiam me nescire, quæ vera sit harum, nec opinari me audere, ob difficultates ab utraque parte mihi impenetrabiles. Dies fortè docebit."‡ RUDOLPHI, whose opinions certainly merit respect, is still in doubt on this subject. The Theory of Nature recently published by two celebrated French philosophers, GAVOTTY and TOULOUZAN,§ favours the hypothesis of the probability of spontaneous generation, on some occasions; but, as the plan of their work did not admit of details on inferior points, their opinion on the subject immediately under consideration is not advanced.

As Dr. Barry's observation applies only to living philosophers, we cannot adduce the opinions of those who do not exist; and, therefore, authorities of the first importance respecting this question must be passed over unnoticed.

It should not, from those citations, be imagined, that we express any particular opinion in favour of casual generation: they are merely adduced to shew, that the assertion of Dr. Barry is rather dogmatical, than deduced from an unbiassed view of the subject. No person, in his senses, expects to see

"—— ubi desuerit madidos septemfluus agros
Nilus, et antiquo sua flumina reddit alveo,
Aëthereoque recens exarsit sidere limus;
Plurima cultores versis animalia glebis
Inveniunt; et his quædam modo cœpta, per ipsu
Nascendi spatium: quædam imperfecta, suisque
Trunca vident numeris; et eodem corpore sæpe
Altera pars vivit; rudis est pars altera tellus.

But the arguments in favour of the probability of the formation of hydatids, and other vermicular animals, from

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* *Versuch einer Geschichte und Physiologie der Thiere.* Chemnitz, 1805.

† *Perpetua Materiei Organico-Animalis Vicissitudo.* Halæ, 1798.

‡ *Lectiones Publicæ de Vermibus Intestinalibus, imprimis Humanis,* p. 55. Stokolmiæ, 1788.

§ *Essai sur l'Histoire de la Nature.* Paris, 1815.

the coagulable lymph of the blood, have not been satisfactorily refuted.

MONTESQUIEU* remarked, respecting an analogous phenomenon, the growth of *fungi*, and some other species of cryptogamous vegetation:—"Cette opinion (l'origin des mousses des graines) est fondée sur une raison de commodité; et chez bien des gens, cette raison supplée à toutes les autres." If Dr. Barry had seen a little of military hospitals during an active campaign, and witnessed the excrescences of the fungous species, (somewhat like champignons,) growing from the external surfaces of bandages of wounds long neglected,—a phenomenon, we believe, first observed at the Hôtel-Dieu, by MERY, and then attributed to the vinegar used diluted as lotions; but since determined to arise without the presence of any vegetable substance, except the linen bandages, &c.; he would, perhaps, have taken a different view of the nature of organization.

There are many observed phenomena, which favour the hypothesis that there is sometimes originally produced, from the matter of living vegetable and animal bodies, (by a deviation from the ordinary influence of the organizing principle,) vegetables and animals of a different species from those whence they derive their origin; and which will continue to propagate themselves in the manner observed in polypi, and several cryptogamous vegetables. These, it must be evident, on this hypothesis, must be very simple in their organization; and, therefore, the objection that has been made to some other views of this subject,—that we do not gather grapes from thistles, is not really applicable to it. The nature of a review will not permit us to enter into details; but such of our readers as are naturalists will readily recognize the phenomena to which we allude.

Returning to Dr. Barry, we find he observes, that

"The lumbricus ascaris, and the lumbricus terrestris, were for a long time, and are still, properly referred to the same species; and, though a few obvious distinctive marks had been discovered by some of the earlier physicians and naturalists, particularly Willis and Ray, it was reserved for modern times to remove all doubts on the subject.* That accurate anatomist and eminent physician, Dr. Baillie, having compared the internal and external structure of these animals, has pointed out many circumstances,

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* *Observations sur l'Histoire Naturelle*, obs. v. There are some curious and interesting observations on this subject in BACON'S *Sylva Sylvarum*, cent. vi.; which may be consulted with profit as well as pleasure.

which prove that they are not of the same species;* and, since the publication of the Morbid Anatomy, Dr. Hooper has, by a most minute investigation, established the distinction between these worms beyond dispute."

We have taken some pains to discover the author's meaning, in the above paragraph, but without success: "*Davus sum, non Œdipus.*" We shall therefore pass on to what is at least intelligible.

"The *ascaris vermicularis* is also still generally considered peculiar to the human body; as no well-authenticated facts have yet been published, which prove that this species has been found to live and grow in any other medium. In the sequel of this essay, I shall prove the fallacy of the opinions hitherto entertained respecting this worm; and shew, by undeniable facts, that it is derived from without."

The following is an abstract, omitting nothing but adventitious and unimportant circumstances, of the account given of those facts by Dr. Barry:

Mr. H— and his family became affected with *ascarides*, soon after they went to reside near Macroom, in the county of Cork, where Mr. H— had built a house; near which was a spring of water, that supplied the family for drink, &c. Strangers, visiting Mr. H—, were sure to become affected with ascarides. After leaving this place for a short time, Mr. H— and his family were greatly relieved from these worms; but they re-appeared, on their returning to their usual place of residence. Mr. H— was then induced to quit it; and his flight was accelerated by a discovery, made by Mrs. H—, of myriads of dark-coloured worms, in the water of the spring on which their suspicions had been fixed, which resembled in every respect, except in colour, the ascarides they were accustomed to pass from their bowels. Dr. Barry examined some of those animalcules.

"They varied in length, from half an inch, and under, to nearly three-quarters of an inch, tapering gradually from the head to the tail, which ended in a point. They were proportionably different in bulk; the largest being as thick as a stout pack-thread, and the smallest so minute as to be scarcely visible without the help of a magnifier: with others, of all the intermediate degrees of size. The colour of the largest worms, and those of a middle size, was dark-brown, when taken from the well; but, upon wiping them gently with a napkin, the colour changed to a very pale yellow; of which colour were numerous small worms, some of which, as I have stated, were visible only by the help of a magnifier.

"Upon comparing the worms of the well with those discharged from the bowels, the resemblance was exact, in shape and external

* Vide Baillie's *Morbid Anatomy*, and Hooper on *Intestinal Worms*. Mem. Lond. Med. Soc. vol. v.

appearance. The largest worms from the well exceeded in size those passed from the body, but not remarkably; and they differed also, in being dark-coloured. This difference of colour may be urged as an objection to the common origin of the ascarides from the well, and those of the intestines; but we have the authority of Hooper for the fact, that ascarides, of a brown colour, are sometimes discharged from the body; and there are numerous instances to shew, that animals, as well as vegetables, become light-coloured by immersion in darkness."

The identity of the worms of the spring with those passed from the bowels of Mr. H— and his family, is very probable; but we concur with the "learned naturalist," to whose opinion Dr. Barry alludes in the following passage: —"A learned naturalist, who has done me the kindness to peruse these papers, objects, that the ascarides of the well may have been of a different species from those which occur in ordinary cases; and alleges, that, to render the proofs perfect respecting the identity as to species, of the ascarides of the well, with those discharged by Mr. H—, (which he allows to be the same,) and the ordinary intestinal ascarides, they should be minutely compared in their anatomical structure:"—and we are surprised that Dr. Barry did not follow the judicious suggestions of his friend. He might, then, have avoided the unfortunate dilemma into which he has fallen, of advancing mere notions as positive truths; and then adducing, with the view to confirm them, observations which appear utterly inadequate to afford them the smallest support.

That we may pass over nothing which Dr. Barry considers tends to support his opinion, we shall transcribe his concluding observations:

"Mr. H—, and his family, have never been wholly free from these worms, during the years which have elapsed since he was driven from his former residence; though their numbers have never been so great, nor the sufferings of him and his family so intolerable, as when they resided near the prime source of the mischief."

Before we dismiss this subject, it may be proper to remark, (since Dr. Barry seems disposed to apply his observations in a general manner,) that, even were the identity of the common *ascaris vermicularis* with those of the spring near Macroom determined, it would afford but little or no basis for positive opinions respecting the origin of the *tænia*, and *vesicular worm* or hydatid, of the human body; which will not admit of a comparison with any other organized being, existing without other animal bodies. There is, in

the cabinet at the university of Pavia, a tape-worm above 230 feet in length. Now, admitting that the abundance of nutriment furnished in the intestines of other animals may occasion an extraordinary growth of the worm, still we should expect to find it, elsewhere, so large as to be at least visible; and that it would not have escaped the researches of naturalists, were its formation not essentially dependant on the secretions from the intestines. It may, perhaps, be said, that these secretions are merely a necessary and appropriate nidus for the development of the ova: were it so, we should expect to find the worms similar in structure in all the animals in which they exist; which is not the case.

Some naturalists have thought, that they had effected a great deal in favour of generation from ova, by discovering worms, somewhat similar to those most common in the human body, in other animals; and thus making it appear, that we thence received them with our food. How did they originate in those animals? All the difficulties attendant on this subject are, however, got rid of, by the hypothesis of VALLISNERI:* he says, they existed in the first-created human beings; and have been, successively and uninterruptedly, transmitted from mother to child, through the medium of the blood of the placenta! The hypothesis of BONNET, respecting the generation of human beings, is now generally judged to be irrational: but, if this be considered as an aberration of the imagination from the bounds of truth, what is that of Vallisneri?

Dr. Barry says, "I think it unphilosophical to deny the extrinsic origin of worms; because there is, as yet, no actual evidence of their existing, and attaining their usual size, except in animal bodies." This sentiment is very just: but it is still more unphilosophical, positively to assert their *extrinsic origin*, without the knowledge of any facts which precisely support such an opinion. BACON would teach us to hold our judgment in suspense, in the present state of our knowledge of this subject: he would say, Man "tantum facit et intelligit, quantum de naturæ ordine observaverit, nec amplius scit aut observare potest."

The rest of this volume is occupied by Reports of the *Fever Hospitals* in Dublin. Of these we shall communicate to our readers only a partial account, as we have already, in different parts of our Journal, treated somewhat in detail of the nature and character of the epidemic fever of that city. A great proportion of these Reports is taken up with

* *Opere Fisico-Mediche.* Venezia, 1733.

observations respecting the origin of the disease; remarks on prophylactic measures; and the appropriate arrangement of fever-hospitals, &c.; with much matter of mere local interest: of which, it is obvious, a general view would be of but little or no utility: and our limits will not permit us to enter into further details on the present occasion. We shall, therefore, confine our observations to what relates to the pathology of this epidemic fever. It is this which will be the most interesting, as well as useful, to the greater proportion of our readers.

XIX.—*Medical Report of the Fever-Hospital, and House of Recovery, Cork-street, for the Year* 1816*: to which is added, some Account of the succeeding Epidemic, exemplified by Cases lately admitted into that Hospital.* By WM. STOKER, M.D. Physician to that Hospital, and Licentiate of the King's and Queen's College of Physicians, &c. &c.

Dr. Stoker is disposed to adopt the following division of inflammatory fevers, considering it as simple, and applicable to practical utility:—" 1st, Idiopathic fevers, comprehending those of spontaneous and contagious origin; 2d, Inflammatory fevers; and, lastly, those in which these two kinds co-exist, or mingle together." We suppose, Dr. Stoker means to signify, when a febrile state exists alternately with and without local inflammation; not where idiopathic and inflammatory fever *co-exist*. By inflammatory fever he signifies that which, he considers, is really dependant on local inflammation. He continues to remark:

" The opinions on which this division rests, that typhus and synochus are not essentially inflammatory, but that, in their simple forms, are diseases of debility through their whole course; and that the excitement, so observable in their early stages, is constitutional re-action; accord with my experience."

As this question respecting the nature of Fever has already occupied much of the space of our Journal in the late numbers, we shall not, on the present occasion, enter into particular arguments on the subject; yet we must observe, that it is with extreme regret we witness such opinions still advanced by physicians of eminent talents; for, we not only believe the doctrine, that febrile phenomena are merely consequences of local disease, and that of an inflammatory nature, to be one of the best substantiated points in physiology; but we also think, that the admission of that doctrine, is a principle of the first importance in the practice of medicine, as well as in the theory of diseases in general. From the time this doctrine was first

advanced in England, by Dr. Pew,* it has, however, been gradually gaining ground; and is now advancing with rapidity and firmness, acquiring additional vigour as it proceeds in its course.

This is not one of those hypotheses which has been produced in a day, to hold a short dominion over minds solely influenced by enthusiasm, and then to sink into oblivion; of which we yearly witness the rise and fall of at least one, in a certain nation in Europe, since the doctrines of Brown gave place to chemical materialism, philosophical idealism, and mystic fanaticism: it is the result of meditation on facts illustrated by the brightest truths in physiology; and its progress has been, like that of all great and important truths, slow and gradual in the commencement of its career, and cautious and reserved in its efforts, until it had encountered and withstood the opposition of conflicting opinions. But, as it is our desire to elicit truth, not to gloss over particular opinions, we shall adduce the most important observations of Dr. Stoker in favour of his own views:

"Morbid anatomy," he observes, "therefore, does not appear to me to warrant the conclusions, which those who hold the opinion of typhus fever being an essentially-inflammatory disease, have deduced from it. I have, in some instances, observed the same partial turgescence of vessels which they report, and likewise signs of inflammatory action, in various parts of the bodies of those who died of fever. The former, however, I believe, is by no means a mark of previous inflammation; and I could generally trace the commencement of the inflammatory action, which produced the latter appearance, to local disease, which preceded or supervened on fever, sometimes at late stages. But, in several cases, where I had witnessed the highest degrees of febrile excitement before death, no such signs of turgescence, or of inflammation, were observable on dissection."

In order to give any importance to the remarks contained in the above paragraph, Dr. Stoker should have explained what are his ideas respecting the "turgescence of vessels;" and what is the nature of the "local disease" which precede fever, and produce inflammation. Arguments might then, perhaps, have been adduced in opposition to his opinions, and truth thus elicited; but, in the manner in which they are here expressed, they are secure from any direct attack. With respect to the statement, that the local inflammation supervened on fever, sometimes at late stages; that is a gratuitous assumption. We, however, do not deny that secondary local inflammation does occur during

* *Medical Sketches.* 8vo. London, 1785.

the paroxysms of excitement in fever. The brain appears to be frequently affected in this manner; but this avails nothing with respect to the subject of dispute. We have had frequent occasion to witness the existence of inflammation of the mucous membrane of the stomach and small intestines, to such an extent as to terminate in ulceration and gangrene, without having been attended with pain; indeed, it requires the presence of very acute inflammation of that tissue, as well as of the heart and other parts chiefly supplied with nerves from the ganglionic system, to produce pain: and it is in consequence of this, that disease of those organs is so frequently undiscovered until after death.

The case of inflammation of the femoral vein, which we have noticed in Mr. CARMICHAEL's paper, in the present volume, will illustrate this point. Here was inflammation existing to such an extent, as finally to cause death, without producing pain; and which was also accompanied, almost in the commencement, with all the ordinary symptoms of "*typhus gravior*." Had such a case occurred to the observation of those who have adopted the opinions we oppose, what idea would they have entertained respecting its nature, and how would it have been treated? It would, doubtless, have been termed *idiopathic fever*, arising from debility; treated, probably, by stimulants; and then, when death had shewn the existence of inflammation, this would have been called *consecutive*. This is not a solitary case with respect to its character: it is the common result of inflammation of the veins: it is similar to what occurs in almost all instances of inflammation confined to parts subservient to *organic life*, which are not, for especial purposes, supplied with nerves from the spinal marrow or brain, as well as from the ganglionic system. When inflammation of these parts is, however, very acute, the whole system of the same nature becomes secondarily affected; and, as some of its organs (the stomach, for instance,) are well supplied with cerebral nerves, the brain is consequently excited, and a new character is thus given to the disease. We may be taxed with running into mere hypothesis on this subject, and thus falling into the error we have just censured; but, what has here been advanced, naturally flows from reflection on the best-established points in physiology, and from observation of what actually occurs in disease. Although we point out the *Histoire des Phlegmasies Chroniques* of M. BROUSSAIS as an excellent medium in which these facts may be contemplated in default of sufficient sources for original observation, and for the most rational notions that may thence be deduced, we know that the mode in which that

physician has seen facts, and the inductions he has thence formed, are liable to the very objections we are ourselves about to advance respecting the conduct of others. But, amidst the fallacy of the testimony of the senses and the decisions of the human understanding, we must admit those opinions that appear to be best supported.

With respect to the proposition, with which the paragraph last cited from Dr. Stoker concludes, we venture to remark, (but assuredly without intending any personal allusion to Dr. Stoker, whose talents we respect,) that the most decided appearances of inflammation have been detected in bodies, by those whose views pointed out where it should be sought for, when it had been passed over undiscovered by other investigators of perhaps equal general talents. This is very common in researches in science: men only see those objects which are situated within the compass embraced by their particular views. How much did MORGAGNI perceive, that would probably have been as though it did not exist, to any other observer?

Dr. Stoker inserts a letter from Mr. KIRBY, which, in some degree, illustrates what we have stated. "The brain," says this distinguished anatomist, "*so constantly supposed to be the seat of inflammation* (in fever), rarely exhibited the characters indicative of such a state. There was seldom any evidence that the peritoneum, or abdominal viscera, had been the seat of local inflammatory action." We imagine, that Mr. Kirby's researches were too much influenced by an idea, that the hypothesis of inflammation of the brain being the sole cause of fever was generally admitted; and that, having shewn the want of foundation for that hypothesis, he had effected what would be considered a circumstance of the highest importance, relative to the disputed points on the nature of fever. Not a word is said expressly of the *mucous membranes*. How frequently have anatomists, eminent for the possession of talents, been known to look at the outside of the abdominal viscera on these occasions, and seeing there no marks of disease, say, None exist in these parts?

It should be borne in mind, that Mr. Kirby's observations were made on bodies which had been interred, and afterwards taken up and brought to his anatomical theatre for dissection; they must, consequently, have been made some days after the extinction of life: at this period, what are considered as the decisive signs of inflammation will frequently have ceased to be evident, when it is the superficial membranes, especially the mucous tissue, that have been the seat of the disease. If the fever have been of long duration,

these signs will, indeed, not be very strongly marked, in some instances, immediately after death: the inflammation of those membranes may have subsided, after having produced effects on the brain, or other organs, that will be fatal; and such effects will ensue in many states of the animal economy, without any considerable degree of lesion of the parts primarily affected. The work of M. BROUSSAIS, to which we have referred, and which he terms a monument of his ignorance, furnishes numerous incontestible evidences of the truth of these statements.

The functions of the mucous tissue, the changes which take place in it from disease, and the influence of this on the rest of the animal economy, have not been sufficiently studied by the generality of physicians. Many seem to expect that inflammation of that membrane should be attended with pain, and that when it has been so intense as to produce fatal effects, that it should have given rise to the formation of purulent matter, or ulceration; neither of which are necessary, nor indeed very frequent, results.

There is another circumstance that must not pass unnoticed: it does not appear that the spinal marrow was examined by Mr. Kirby. Dr. SANDERS, of Edinburgh, has for many years taught and demonstrated the importance of such an investigation, in researches respecting the nature of fever, as well as in a variety of other forms of disease.

False conclusions are frequently deduced from the notion, that debility of the capillary vessels of a part will give rise, primarily, to an accumulation of blood in it; that these vessels will become passively dilated from the impulse given to the blood by the heart. Thus, we frequently hear of congestion of blood in the capillaries, from debility. This is one of the remaining errors deduced from the mechanic and hydraulic hypotheses; in which the heart was considered as the sole agent of the circulation of the blood. More accurate attention to physiological phenomena, whether of health or of disease, would shew, that, when the capillary vessels are in a state of debility, they are always collapsed; and the parts supplied by vessels in such a state, are universally shrivelled, cold, and exsanguinous. In order to preserve the transmission of blood to them, the capillaries must be in a state of active dilatation, in a sort of erethism, they must call it, in a manner, to use a metaphorical expression of BICHAT: without this, the blood will not be sent to them; they will collapse, not suffer distension.

Let us express this in another way:—The influence of the nerves on the capillary arteries causes an erection and a

dilatation of them; they thus form open capillary tubes, into which the blood rushes: without nervous influence, they lie flattened, and such a degree of *vis à tergo* as can be exerted by the heart would increase or promote this obliteration of their cavity, by pressing the sides of the vessels together, after the larger ramifications had become distended.

As the chief observations and reflections of Dr. Stoker, respecting the pathology of fever, and on the mode of treatment, are consonant with, and deduced from, those we have already noticed, we shall pass over the remaining part of this paper; since, our remarks on it would occupy space we are disposed to devote in a manner more useful to our readers; and our duty, as reviewers, would not permit us to insert in this part of our Journal, without remarks, such opinions as are not consonant with those we have been led to adopt from our own observations, and from reflection on the doctrines of the majority of the most eminent of existing physiologists. Such an abstract as our limits would permit us to adduce, would convey but little idea of the more valuable part of this memoir; and that it contains much valuable matter, our readers will readily be induced to believe, notwithstanding what we have said respecting it on some few particular points. The productions of all men of genius must receive such a character, even from those who do not agree with them respecting some ideas which may have influenced their observations.

XX.—*Medical Report of the Sick-Poor Institution, for the Year* 1817. By John O'Brien, M.D. Fellow of the King's and Queen's College of Physicians in Ireland.

We have already had occasion to speak of the talents of Dr. O'Brien; and, although we then, as we must now, noticed his opinions in a brief manner, we hope it was done in such a way as clearly to express our sentiments respecting them.

This Report, although especially devoted to observations and remarks on Fever, embraces a general view of the principal diseases affecting a district of the city of Dublin, comprising a population of upwards of fifty thousand persons. The observations are, necessarily, so numerous and various, as not to admit of an abstract. We shall, however, transcribe the following very interesting remarks: they indicate truths, until lately too generally overlooked, but which are of the highest importance in the practice of medicine. The first relate to dysentery, which was at one period epidemic in Dublin:

"The disease, which was evidently produced by the bad quality of the bread and other food of the poor, was attended with strong inflammatory fever, and severe tormina of the bowels, which very nearly approximated to enteritis. In all cases, therefore, of unusual severity, I had recourse to venæsection at the commencement, which was repeated until the tormina became mitigated, and the pulse indicated a remission of inflammatory fever. After blood-letting, the remedy which produced the most remarkable benefit, was a powder, composed of ten grains of Dover's powders and one grain of calomel, taken twice, or sometimes thrice a-day, according to the exigency. During the use of these powders, a purging-draught, consisting of infusion of senna and sulphat of magnesia, was given every second day, until the scybalæ disappeared. In addition to the above, fomentations with diluted spirit of turpentine, semicupium, and flannel bandages around the belly, were sometimes directed; but the powders above mentioned were thought to give the most substantial relief."

"Although dyspepsia frequently exists as a primary disease, arising from slight inflammation and thickening of the coats of the stomach, in which ulceration, and even erosion, have been detected by dissection; yet I believe, in general, it is symptomatic of diseases of the surrounding viscera, and chiefly of the liver. To the unfortunate habit of drinking ardent spirits, the frequent occurrence of this disorder is chiefly to be attributed; although, I am convinced, the quality of the food has also some effect in producing the disease. The dyspepsia of the poor, and indeed of the rich, arises generally from induration of the liver; and from the same cause arise the numerous instances of anasarca and ascites, to be met with among the poor."

That we may not appear eager to adduce such opinions as are favourable to the doctrine respecting fever to which we are converts, and disposed to shun the disclosure of those of men, whose talents command respect, which are in opposition to it; we shall observe, that Dr. O'Brien expresses his "dissent from the opinion that this disease (the epidemic fever of Dublin) is to be considered as one of the phlegmasiæ, and our treatment guided by this hypothesis."

XXI.—*Medical Report of the Fever-Hospital, Cork-street, Dublin; containing an Account of the Progress of the present Epidemic.* By F. Barker, M.D. Honorary Fellow of the King's and Queen's College of Physicians; Professor of Chemistry in Trinity College, Dublin; and Senior Physician to the Hospital.

Of this Report an abstract could not possibly convey an adequate idea. It is itself a condensed account of very extensive series of observations, especially on what may be considered as the more remote or predisponent causes of

fever. Dr. Barker considers, in succession, the circumstances which appeared to be connected with the origin of the epidemic; the development and progress of the malady in different parts of the country; its contagious origin; the influence of season on its character; the age and condition of its principal subjects; its immediate and concurrent causes; the symptoms of the disease in general, and in individual cases; the evidence in favour of critical days; its mortality at different periods; its essential character; the mode of treatment; a general view of the progress of epidemic fever in Europe in modern times, and the probability that, " thus excited on the continent, (by the influence of a state of war,) it has been introduced into these countries, (Great Britain,) where, from the operation of various exciting causes, it has become extensively epidemic;" and the appropriate prophylactic measures. This account will be perused with much pleasure and advantage in the detail. The numerous observations are arranged with that order and precision, which shew them to be deduced from extensive views, directed by a mind well qualified to distinguish the essential from the accidental circumstances of things.

Medical logic does not, in reality, extend beyond the history of facts, and therefore to contribute to our knowledge in this respect, is to develop the principles for the practice of the healing art; yet, we cannot help wishing that Dr. Barker had indulged more in reflections illustrative of these facts, particularly on those relative to the nature of the fever under consideration: they would, it cannot be doubted, have been of considerable utility to the medical practitioner; and they would also have given much additional interest to the observations he has here adduced.

Here we close this volume, as far as regards the consideration of it in our official capacity; but it will often be referred to in our private meditations. On turning to the observations respecting it which have occupied our pen, we perceive that, in extent, they really bear a due relation to the time they have engaged; but, on revising them in detail, we discover how much important information has been left unnoticed, and how inadequately we have expressed, in direct terms, the sense we have of the value of the source whence they were derived. To do this would, however, be superfluous; for the extracts which have here been given, are themselves the best, as well as the most appropriate, heralds of the work.

*A Practical Treatise on the Morbid Sensibility of the Eye, commonly called Weakness of Sight.* By JOHN STEVENSON, Surgeon-Oculist and Aurist to H R. H. the Duke of York, their R. H. the late Princess Charlotte, and the Prince Leopold of Saxe-Cobourg; Member of the Royal College of Surgeons, &c.; Lecturer on the Anatomy, Diseases, and Operations, of the Eye and Ear; and Author of a "Practical Treatise on Cataract." Third Edition. 1819.

THE length of time during which this valuable tract has been before the public, and the extent of its circulation, preclude the necessity of any present comment on its general character. The views developed in it stand now confirmed by the concurrence of lengthened observation; and the author, in his more extended experience, finds no ground to depart from the opinions which he at first promulgated. No change has been introduced into the body of the work, in this third edition; but, in a preface, Mr. Stevenson has introduced some remarks, deduced from a wider range of practice in the disease, of great practical utility.

He finds that there are some unfrequent instances, where the morbid sensibility of the eye will not give way to the moderate depletion which he considered at first to be quite efficient in the removal of the disease. Some few cases have occurred to this gentleman, wherein he has been obliged to pursue the system of topical detraction of blood to an extent apparently greatly disproportioned to the indications of the disease, and yet followed by eventual success. Such cases the author looks upon as connected with a morbid state of parts more deeply seated than the immediate organ of vision, which state, perhaps of long standing, and interesting probably a considerable extent of structure, is less susceptible of influence from superficial remedies.

Some points in practice, valuable, as founded on enlarged experience, are noted, in touching on the respective influence upon diseased states of the eye, of the several modes of abstracting blood. Mr. Stevenson gives it as his opinion, that, in all the forms of acute ophthalmia affecting the external parts of the eye, the most prompt and decided relief is obtained by drawing blood from the external jugular vein. This seems, in many instances, to be alone sufficient for the removal of disease. In iritis, and acute inflammation of the deeper seated parts, the author recommends to open the trunk of the temporal artery.

We think the practical matter subjoined in this preface to the present edition, adds considerable value to a work of previously admitted merit.

*An Analysis of the Subject of Extra-Uterine Fœtation, and of the Retroversion of the Gravid Uterus.* By JOHN KING, Esq. 8vo. pp. 176. Burks and Co. Norwich; and Callow, London. 1818.

THE most interesting part of the work which we now introduce to our readers, is an account of a new operation for the delivery of an extra-uterine fœtus: to this we shall, therefore, devote our chief attention, passing over some preliminary reflections respecting the act of conception, with which it commences, (which we rather wish the author had not indulged in,) to what will render his memory identical with the history of the medical art.

The case which we are about to relate occurred in Edisto Island, in South Carolina, where Mr. King formerly resided. Nothing is said respecting the state of the patient during the time of gestation, previous to the commencement of the pains of labour, which the woman had experienced for four days, when Mr. King was requested to visit her. These pains occurred in the manner of those of natural labour, but were not attended with any other of the ordinary signs of that process. On examination *per vaginam*, the os uteri could not be discovered. The nature of the case was readily discerned by Mr. King; and, the patient being exhausted by the pains she had suffered, he, after a little reflection, determined to perform the operation, of which we shall give the history in his own words:

"It consisted in laying the vagina open to a great extent. The head of the fœtus floated and vacillated on the right side of the uterus, and pushed the uterus from its situation. I introduced a small bistoury, guarded by the end of my finger, as far as I possibly could, so as completely to embrace the circumference of the head, and thereby prevent any laceration of the parts in the progress of delivery. I then pierced the vagina through, and carried the knife five or six inches downwards and backwards, so as to insure the easy extraction of the child's head. The instant the vagina was laid open, the waters flowed abundantly; the membranes being laid open with the same incision. I then introduced my hand through the wound in the vagina, and found the infant very high up, and firmly fixed, without any prospect of its descending into the pelvis.

"As we could derive no help from the contraction of the uterus in this case, and all the efforts of the mother depending on the contraction of the recti, transverse, and oblique, abdominal muscles; I therefore desired the assistants to press gently and constantly upon the abdomen, and to imitate a circular descending motion with their hands. The mother, animated thereby with the rospect of delivery, redoubled her efforts; and, with the help of

the vectis, I perceived the head to advance by slow degrees into the pelvis, and I afterwards, with the forceps, completed the extraction, after a long and uninterrupted exertion. The child appeared to be still-born; but, not being certain of that, I inflated the lungs, and was pleased to find it had borne the brunt of the day without a fatal event. The hæmorrhage from this large incision was inconsiderable. The infant was of the common size, and well-conditioned. The placenta was uncommonly small, and the funis umbilicalis remarkably thin, so that it ruptured on the evolution of the infant, though without any hæmorrhage.

"The morning after delivery, I extracted a full bleeding from the arm, and repeated an anodyne. I left the patient without complaining. I had caused her to lie on an inclined plane, upon her back, with the head very low.

"I was not able to see her again until the third day. I then found her state uncomfortable, with pain over the pubes; and, on examination *per vaginam*, discovered the intestine pushing at the wound, the wound itself being much contracted. I ordered her to lie on the left side, with the hips more elevated, to favour the retraction and gravitation of the intestines from the wound. This uneasy position favoured our views and answered our expectations. I caused a blister to be applied over the pubes, and prescribed a saline anodyne mixture, to be taken three or four times a-day. I made it an object to constipate the bowels for ten days, until the danger of any hernial protrusion was over.

"In two weeks this woman, without my consent, walked about. I then found the intestine could no longer protrude through the wound, under any circumstances of posture. In two weeks more, I could not discover that there had been any incision made in the vagina. The uterus resumed its natural site."

A similar operation has since been performed by Dr. Delisle, of Valogne,* but in this case neither the mother nor fœtus survived. This event may, however, be probably attributed to the great sufferings experienced by the mother during the whole period of gestation, which had rendered her state of body extremely feeble. She also experienced a considerable degree of hæmorrhage before the placenta could be extracted; and she was almost exhausted by labour-pains before Dr. Delisle was called to visit her. The infant was born alive, but died in about half an hour: it was not apparently of above six months and a half, or seven months.

Many circumstances render this operation preferable to an incision in the abdominal integuments, in cases of extra-uterine gestation; particularly, the less probable danger

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* *Bulletin de la Societe Medicale d'Emulation.* Mai 1818. *Journal Universel des Sciences Med.* t. x.

from a wound in the vagina than from one in the abdomen, and the free exit that in the former situation would afford to any hæmorrhage that might ensue on the separation of the placenta. But, in opposition to this may be advanced, the greater difficulty in the extraction of the fœtus through the pelvis, when nearly full-grown, than through an opening in the abdomen. Some degree of prejudice seems to exist against the latter method, apparently in consequence of its forming part of an operation of a very different character, that of hysterotomy. It does not seem to have been sufficiently considered, that the principal danger in this case depends on the incision of the uterus, not on that of the external integuments.

The Signori Rossi, of Parma, a short time since, performed the incision of the abdomen in a case of rupture of the uterus occurring during labour, with a favourable result to the mother. The infant was, however, born dead, apparently in consequence of the placenta having been long separated from the uterus; as the aid of those surgeons was not required until after the lapse of six hours from the time of the accident.

Extra-uterine pregnancy is, apparently, no uncommon occurrence, as a great number of cases have been recorded within these few years past; and the propriety of performing one of the above operations without delay at the proper epoch, cannot possibly be doubted. Experience alone, we think, can determine which is the preferable method in the generality of cases. The period at which it should be executed is indicated by a circumstance, observed in nearly all the cases on record, which must confound the reasonings of the mechanists on the physiology of the human body: we mean the occurrence of uterine contraction and pains, similar to those of ordinary labour, about the period of the full growth of the fœtus. Of the laws on which this depends, we shall probably for ever remain ignorant. The causes of the enlargement of the uterus, and the formation of the flocculent membrane in it, similar to the epichorion, which has also been witnessed in the cases where opportunities for examination have occurred, are more easily intelligible.

We shall not enter into a consideration of the arguments of Mr. King to prove the occurrence of extra-uterine fœtation, as we do not believe it possible that any doubts can be entertained respecting it at the present period. Those arguments would have possessed more importance a few years since, than they do now after the discoveries that have recently been made, and generally promulgated, respecting the subject to which they relate.

# FOREIGN MEDICAL AND PHYSICAL SCIENCE AND LITERATURE.

*A Historical and Practical Treatise on Scurvy, as it affects Man and Brute Animals.* By M. BALME, Doctor in Medicine of the Faculty of Montpellier; late Surgeon of the first Class, and ex-Physician to the Army, &c. 8vo. pp. 323. Lyons, 1819.*

FROM the term *Scurvy* having been applied to forms of disease of disputed identity of nature, by various writers, we are at a loss to determine what ideas should be associated with that appellation, without a precise and particular explanation being affixed to it whenever it is employed. Sir JOHN PRINGLE, LIND, Sir GILBERT BLANE, and several other esteemed authors, have considered that the disease which affects persons who have been long at sea, and used the ordinary diet of seamen, or persons confined in close garrisons, deprived of fresh animal food and acescent vegetables, should alone be termed scurvy; whilst several other English, and many of the continental physicians, have thought that a disease of a similar character may occur under various other circumstances, and with the use of different sorts of diet: and to these the term scurvy has, consequently, been also applied. If the latter proposition be correct, this mode of employing the term is evidently conformable to the ordinary method of medical nomenclature; and, whilst the precise etiology of this or these species of disease remains undetermined, it cannot be objected to by arguments deduced from the received principles of nosology. We shall, therefore, use the term with this extensive application, in the following analysis.

M. Balme treats on scurvy as a morbid affection arising under the latter circumstances; and he advances numerous observations, deduced from his own extensive experience, and the writings of other authors, to shew the correctness of the view he has thus taken of the disease. As our intention, in the analysis of the work of Dr. Balme, will be best fulfilled by proceeding from particular to general observations, we shall immediately enter into the consideration of it, and furnish our readers with a progressive abstract of its contents.

The author commences with some general reflections on the nature of the animal functions in health and in disease; the object of, which is to prove, that morbid actions are merely modifications of healthy ones: an opinion we have frequently expressed, and

* *Traité Historique et Pratique, du Scorbut, chez l'Homme et les Animaux.* Par M. BALME, Docteur en Médecine de la Faculté de Montpellier, &c. &c. à Lyon, chez Cabin et Co.; et à Paris, chez Gabon.

which we believe Bordeu to have first substantiated. He then adduces some arguments to shew, that a variety, in the nature of external stimulants, is necessary for the preservation of the health of the animal economy.

"These principles," says Dr. Balme, "being granted and applied to scurvy, we shall perhaps perceive, that this cachectic affection is merely the result of a too long continued sameness in the state of the body, (particularly if this permanent regularity applies to several of the most important functions,) and that the disease can only be removed, by submitting the system to the impression of new and various species of stimulants."

In support of the latter ingenious, though hypothetical, opinion, Dr. Balme adduces some observations, to shew that this malady does not arise solely from the use of aliments, the nature of which is essentially bad.

"In general," continues the author, "all the descriptions of scurvy, furnished by the different practitioners who have seen and treated it, would oblige us to admit that a vitiated state of the digestive organs, after the use of a bad species of food, is the most ordinary circumstance, and in a manner, the *sine quâ non* condition of the appearance of this malady; and, at the same time that this disorder of the *primæ viæ* is increased or diminished, according to the greater or less deviation of the state of the skin, or other sympathising organs, from that of health. But is this alteration in the digestive system always the result of the same causes?"

In relation to the above question, the author then refers to observations made by Dodonea,* Hoffmann,† Haller,‡ Millman,§ Joseph Franck,‖ Sydenham,¶ Huxham,** Weikard,†† and several other respectable authors, which invalidate such an exclusive opinion; and seem to prove, that any particular regimen, either vegetable or animal, mild or stimulant, will occasionally produce the disease, when persevered in with constant uniformity. Several cases are also related, or referred to, to shew that it is particularly apt to ensue from the use of a diet consisting of a considerable proportion of sugar, with any one species of vegetable. Some of these cases, we must remark, are not described with sufficient accuracy and precision, to satisfy us that they were instances of scurvy; others evinced all the ordinary symptoms of that disease, and were thus termed by the authors by whom they were related. These affections appear also to have been removed

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* *Med. Obs. exempl. rar.* p. 59.
† *Opera*, t. iii. p. 382.
‡ *Disput.* t. vi. p. 507.
§ *Treatise on Scurvy.*
‖ *Bibl. Broun. German.* t. ix. p. 122.
¶ *Opera*, t. ii. p. 99.
** De Haen *Ratio Medendi*, t. iv. p. 166.
†† *Element. di Medic. Pratic.* t. ii. p. 189.

by the use of a different diet from that to which the subjects of them had previously been accustomed.

The author considers that the cases to which he has alluded, prove that scurvy will ensue from a diet of vegetable, as well as from one of animal food.

"But if, in objection to this," he continues, "it is stated, that the Brahmins and our mountaineers are long-lived, although they feed only on vegetables; I would reply, that these individuals, habituated from their infancy to this regimen, correct the defects of it by the pure air which they ordinarily respire, by the light water they drink, by various species of exercises of mind or body, &c."

The influence of variation in the articles of diet, although of the same species, in removing scurvy produced by the above cause, is "annually shewn in the inhabitants of Sologne, who become scorbutic towards the end of September: their faces are then puffed, their strength is depressed, their gums spongy and disposed to bleed, and their skin marked by red blotches.* This cachectic state arises from their eating only bread with a mixture of rye, from July to October, and drinking only water during the same period. But, after this time, they become more active; their countenance, and the colour of their skin, assume their ordinary appearance; and health is at length perfectly restored. This change evidently arises from the alteration they make in their diet at the same time, by using rape-seed as part of their aliment, which is new to them at this season of the year. Such is the case with the poor inhabitants; but the higher class of persons, who despise this food and will not employ it, do not equally participate in the good effects of a change of diet at the same period, and are often obliged to have recourse to medicine, properly speaking, to get relieved from the infirmity we have described."

Dr. Balme next treats of the "*direct or proximate causes of scurvy.*" He here observes, that the appearance of the disease, in consequence of a diet intrinsically of a good quality, can only be explained by admitting that the stomach, from having been accustomed to the long-continued stimulus of the same aliment, ceases at length to be susceptible of its impression, and gradually falls into a state of inertia, which permits, and indeed favours, the action of other enervating causes; such as want of exercise, the distressing passions, &c.† He continues to remark, that disorder of the digestive organs alone, although necessary for the production of scurvy, is not always accompanied with it; in consequence of some other functions, correlative or consentient with those of digestion, making up, in a manner, for the weakness of the latter.

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* *Soc. royale de Med.* t. i. *Hist.* p. 343; *Mémoires*, p. 68.

† Girtanner stated, as a general proposition, that scurvy arises solely from the abstraction of the habitual and ordinary stimulants of the animal economy. Vide *Gianini, Memor. di Medic.* t. i. p. 145.

It is thus that varied occupation, which entertains and supports muscular action, frequent change of linen, which provokes free and continual cutaneous perspiration,* agreeable passions, which excite the whole system, &c. oppose the occurrence of scurvy.

Dr. Balme adduces several instances, to shew the influence of these adventitious causes in the production of scurvy, both at sea and on land; that is, to shew that a certain species of aliment may, under some circumstances, be used without inconvenience, which, on other occasions, will quickly give rise to scurvy.

"From what has already been stated," he continues, "it may be established, that scurvy is a cachexia, the primitive cause of which is debility of the digestive system, the consequence of a too long continued sameness in the mode of living: the nature of which varies, because of the different regimen that may have been adopted; the character of which is not always constant, since it depends on the disposition of different organs to receive the impressions thence arising; and lastly, the establishment and progress of which always depend on the concourse of several enervating causes."

Dr. Balme then adduces some remarks on the division of scurvy, adopted by some authors, into *acute* and *chronic;* and he very properly considers, that the diseases which have been arranged under the former appellation, are essentially different in their nature from those varieties of morbid affection which the most esteemed authors have agreed to term scurvy. The distinction into *acid* and *alkaline*, he thinks, is founded on physical facts, and dependant on the nature of the aliment employed; the exclusive use of vegetable food tending to produce the former, and that of animal food the latter. He remarks,

"Thus, in the *mammiferi*, we perceive the milk,† and the urine,‡

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* Derangement in this function has, perhaps, after that of the digestive organs, the greatest influence in the development of scurvy. "When the discharges of perspiration by the skin are copious," says Dr. ALEXANDER WILSON, "the scurvy can never rise to a great height." (*Observations relative to the Influence of Climate;* 8vo. London, 1780.) "It is very rare," BOSQUILLON remarks, in his notes on CULLEN's First Lines, "that scurvy takes place whilst cutaneous transpiration is maintained to a considerable degree." "The suppression of perspiration," according to COLOMBIA, (*Médic. Militaire*, t. v. p. 187,) "is in part the cause of this cachexy. This is so true, that, towards the end of moist winters, the gums of many persons become soft, swelled, and spongy. Scurvy is endemic in the people of the north, who have but little transpiration through the skin; and when scurvy is epidemic, those who do not suffer cutaneous perspiration, ordinarily evince the first symptoms of the disease (SANCTORIUS)."

† *De Natura et Usu Lactis in diversis Animalibus;* auct. T. YOUNG, M.D. &c. t. viii. § 1 and 6.

‡ WEDEKIND, *De Naturâ, &c. Morb. primarum Viarum*, p. 10.

tend to alkalescence or acescence, according as the animal which furnishes those fluids is nourished with animal or vegetable substances. Thus, the milk of a woman accustomed to the use of the former conjoined with a moderate proportion of the latter, does not coagulate, not even when it is mingled with acids; whilst that of one who lives almost solely on vegetables, becomes nearly in a state of coagulation at the ordinary temperature of the body,* participating more of the nature of that of an herbivorous animal, with which an infant cannot be fed for any considerable length of time with impunity.† Similar results have been obtained from observations on the milk of bitches, according as their food was vegetable or animal."

The influence of those species of food on the urine, is next considered. The former tends to produce an abundant evacuation of that fluid, and solely causes the presence of saccharine matter in it; the latter induces a copious formation of saline substances.

These observations are adduced to shew the propriety of the latter division of scurvy; which the author considers to be more precise than that of *sea* and *land*, as pointing out the essential, and not the accidental, causes of the disease. The alkaline species is, however, that which commonly occurs at sea, in consequence of the diet to which the subjects of it are there confined; whilst the acid is more frequently seen on land.

This division of scurvy, although not exactly consonant with the author's principles respecting the nature of the disease, is not wholly objectionable, since it points out an important object in the therapeutical measures that should be had recourse to in its treatment.

We shall pass over a long chapter, devoted to the consideration of the *adjuvant causes of scurvy*, since these are so numerous and variable in their degree of influence, as to render a concise exposition of them impracticable: the chief of them will also be so obvious as not to require exposition. In this division of the work, we find the author deviates in several points, in his arguments and conclusions, from the principles with which he commenced this discussion. The following proposition is particularly objectionable:

"Shall we not be authorized," says Dr. Balme, "from what has been stated, to consider the salivation which often takes place in the treatment of the venereal disease, as a species of scorbutic affection?"

It is very rude pathology, to consider an affection, arising essentially from the presence of a stimulus in the system, and which consists in the consequences of preternatural excitement, as of the same species as one ensuing from the want of excitement, because there may be some slight similarity in some of their symptoms.

This occasional absence of precision of ideas, is the most serious

* *Gaz. Salut.* 1786, No. xxxiv. Retz, *Nouv. Inst.* t. ii. p. 424.
† Franck, *Delect. Opus. Med.* t. v. p. 364.

error into which men are apt to fall, on first attempting to generalize an extensive assemblage of previously diffused facts. The above objection will also apply to many of the cases amongst the multitude referred to by Dr. Balme, in other authors: on collating them, we find many of them equally vague from the principles he first advanced, and several of them of a very indeterminate character. There is a difference between choice and extensive erudition, of which all persons do not seem to be fully aware; and the bitter satire of Bordeu* on Haller is too often applicable to authors, who are apt to let their judgment sleep whilst they make a display of their learning.

M. Balme next treats of the modifications scurvy undergoes, according to the age of the patient and various other adventitious circumstances.

In infants, the first symptom is frequently a copious flow of glairy saliva, often of a sanguineous appearance, and of an extremely fetid odour; the maxillary and labial glands become tumefied, and have a tendency to suppurate; the tongue is enlarged; there is great muscular debility; blotches on the skin are not present, but there are sometimes tubercles in the form of ganglions, dispersed in different parts beneath it; the milk-teeth soon become carious, and are succeeded by others, which, although white on their first appearance, soon decay; the mesenteric glands are particularly liable to become affected; the gums become tumefied and readily bleed, and the mouth is covered with an aphthous eruption, somewhat like millet-seed; the body becomes phlegmatic; and a sort of boil often appears about the neck or face, which terminates in a gangrenous ulcer. Scurvy, especially to this extent, is not often witnessed, except in children brought up in hospitals. "The epidemic disease which reigned amongst the children at *La Charité*, at Lyons, in 1796," says the author, "appeared to me to have been really scurvy: it was characterized by general weakness, puffiness of the skin, swelling of the gums, ulcers in the mouth, which became progressively more severe. There was neither fever, oppression, restlessness, delirium, nor diarrhœa, during the first eight days of the disease; fever nor diarrhœa did not ensue, until after the lapse of a fortnight. In this very distressing state, they preserved the proper exercise of their intellectual functions and their appetite, until death; which took place without either convulsions or pains. Their bodies putrefied with great rapidity."

In old persons, the author continues, scurvy chiefly affects the abdominal viscera: it is sometimes accompanied with troublesome diarrhœa, and generally with great debility, of the lower extremi-

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* "S'il s'agit d'un petit muscle, d'une figure anatomique, d'une discussion curieuse, M. Haller ne s'épargne point; il cite des auteurs avec une abondance qui fait honneur à son erudition; il fait mille pénibles recherches; il instruit son lecteur en le conduisant dans tous les coins de sa bibliothèque; et lorsqu'il s'agit des matières de pathologie, il n'a rien à dire, rien à citer." *Recherches sur les Crises*, § lix.

ties especially. Negroes are generally affected in the same manner: in them, the affection of the bowels often assumes the character of dysentery. Women are more liable to it than men; but it is in them less severe than in the latter. Persons of a lively disposition are not so subject to severe affections of the stomach and other abdominal viscera, when affected with the disease, as those of a melancholy habit. It is more frequent and severe in winter than during any other season of the year, and is especially apt to take place, when favoured by the more essential causes, in cold climates. A moist and cold atmosphere is particularly favourable to its production: under these circumstances, the skin is especially affected with eruptions, and the limbs with œdematous swellings. Dr. Aaskow, to whom the author refers, remarked a difference in the degree in which seamen in the same ship are affected. Those whose cabins were situated in the lower part of the vessel, were always more severely afflicted than those who slept near the upper deck. From what has been stated, and from various other observations, which our limits oblige us to pass over, Dr. Balme concludes, that

"Accidental differences in its character will arise, according as the greater or less debility of the system may dispose the different organs to be particularly influenced by accidental causes. In some scorbutic patients, the liver is especially affected; in others, the spleen, the extremities, the gums, &c. But, notwithstanding this diversity of the symptoms, it is always in the stomach that the malady has commenced; whilst lesion of the other viscera is rather an effect than a cause."

The author then proceeds to shew, that, although scurvy was not until modern times noticed as a distinct disease, it was not unknown to the ancients; and that the affection they describe as similar to scurvy, is mentioned to have arisen under circumstances which accord with those he has considered essential to the production of this malady.

A chapter is then devoted to the consideration of the *symptomatology of scurvy.* This is a valuable part of the work. The general and particular symptoms are examined with much accuracy, and the characteristics of the disease are here determined with precision. Of this we shall take a general, but rapid, view.

"Before we successively pass in review the most striking symptoms of scurvy," says the author, "we shall observe: 1°. That the order in which they appear frequently varies; for, when a person has been debilitated by a fever, or other disorder of long continuance, the gums are almost always first affected, and lassitude accompanies the first period of the disease; whilst, when the patient is deprived of exercise, by a fracture, a contusion, or a wound, it is in these parts where the first symptoms of scurvy appear. 2°. That the symptoms will be evinced more especially in the external parts, in persons who had previously been accustomed to lead an active life; whilst the same affection will more frequently present itself under the form of hypochondriasis, and

other nervous affections, in those who are naturally or habitually sedentary, morose, and fatigued by mental languor and uneasiness. 3°. That, in an individual whose nervous system is particularly mobile, and in whom the nervous action consequently predominates over that of the other systems, an improper mode of life, of greater or less continuance, will not produce scurvy characterized by the ordinary symptoms of *humoral* disorder, but rather a nervous affection, varying in extent and severity. And, 4°, that it is in the evening, and during night, that the most marked symptoms of scurvy are exasperated."

A general weakness is ordinarily the first symptom. This debility is chiefly experienced in the muscular system, and not much in the circulatory organs, excepting those of the adipose fluid; the receptacle of which (the cellular tissue) especially participates with debility of the other organs. There exists essentially, as the very principle of scurvy, a want of the natural healthy influence between the different organs, particularly between the abdominal viscera and the cutaneous system: the former being imperfectly excited by improper or ill-elaborated food, communicate their state of disorder to the cutaneous organ; which, in return, has an unfavourable influence on the abdominal viscera, of which it increases, at least secondarily, the morbid state.

The liver is ordinarily implicated in the disease, principally in those of a robust habit of body and who reside in hot climates. When this organ is affected in those living in a cold, moist atmosphere, and in young, lymphatic, and scrofulous subjects, its colour is observed, after death, to be much altered: it is less dark, and is in a manner blanched. The spleen is also frequently affected, and sometimes to such an extent, as to become disorganized. Tumefaction of the gums and fetid breath, are most common in cold and moist climates. These symptoms are often diverted by ulcers on the limbs, and general eruptions on the skin: the latter affections are most common in warm regions. Affection of the gums was rarely witnessed amongst the soldiers attacked with scurvy at Alexandria; and is considered by the author to affect seamen in particular, in consequence of their especial use of saline aliments, spirituous liquors, and the smoking of tobacco. This symptom was particularly prevalent amongst a body of military who were stationed on the summits of the Alps, and who, to obviate some of the inconveniences of a cold and humid atmosphere, almost incessantly masticated and smoked tobacco. Pains in the limbs, especially the lower extremities, are common, and generally early, symptoms of the disease. Pains in the chest with oppressed respiration, are sometimes present; and the author has observed them to be alleviated by the appearance of a more free cutaneous transpiration, or by hæmorrhage from the gums.

The skin, in consequence of its functions being so intimately connected with those of the digestive organs, is the part most commonly affected. Those scorbutic blotches, the author remarks, which not only interest the cellular tissue, but extend also to the

muscular substance, are probably owing to the general debility, in which the vascular ramifications participate, and which, preventing the free passage of the blood from the arterial to the venous vessels, occasions it to stagnate and accumulate in the cellular tissue; especially in those parts the least influenced by muscular action. The blood thus stagnant is less subject to the salutary influence of the vital powers than in the ordinary state; it consequently becomes altered in its qualities, and gives rise to sanious ulcers.

The intellectual functions must necessarily be influenced by such a state of the general system, but derangement of them is not usually proportionate to the alteration of the physical strength. They have often remained undisturbed until death, which has taken place without pain, sometimes whilst the patient has attempted to turn himself in bed.

The disorganization of the soft parts, and the acrimonious state of the fluids, affect also the texture of the more solid structures. Thus, as we observe the cicatrization of wounds and ulcers prevented, or destroyed when already effected, in the more confirmed state of scurvy, so it is not rare to witness the destruction of the union of bones that had been fractured, and a preternaturally friable state, or caries, of these parts take place; and they are sometimes found to become fractured by the voluntary muscular actions, apparently in consequence of a commencement of solution of continuity from the want of due nutrition.

The heart and arteries are also much affected in the latter stages of scurvy. The pulse is soft and feeble, and there is a great disposition to palpitation of the heart, and all the symptoms of aneurism of that organ; a disease which, the author observes, is very frequently established in the patients of scurvy. This disorganization of the fibrous and muscular structures is not so evident in that of the nerves. In those cases in which it does, however, occur to much extent, and is accompanied with decomposition of the other tissues, the most severe state of adynamia ever witnessed in the human body is the result.

The above symptoms are dependant on the lesion of the solids; those consequent on the alteration of the different fluids, are now to become the subject of consideration.

The blood in the commencement of scurvy, may have the natural appearance, and be insipid to the taste; although the saliva is at the same time of an acrid quality. But, in the course of the disease, it becomes dark-coloured, its surface greenish, and the serum very acrid; and in the latter stages, this fluid appears dissolved, without albumen, and its integrant parts ill-elaborated, and even confounded. This alteration of the state of the blood, the author considers, is to be attributed to derangement of the organs destined to prepare it, rather than to the ill qualities of the chyle that is mingled with it.

The urine generally varies from the natural state: it is ordina-

rily irritating in quality, of a deep colour, and small in quantity; it often deposits a brick-coloured sediment; and a saline pellicle is sometimes observed on its surface. These alterations are more evident when the cutaneous transpiration is suppressed. But the state of this fluid varies so much, according to the nature, severity, and period of the disease, that no precise observations respecting it can be advanced: the same remark will also apply to the secretions in general.

We shall pass over the sections of this work which treat of *the incompatibility of scurvy with some diseases; the diseases which bear a marked analogy to scurvy; the complications of scurvy with some other diseases; natural or artificial scurvy in brute animals;* and *the period of the development, and prognosis of scurvy;* as incapable of an analysis compatible with the limits of our Journal. Besides, we consider that attentive and accurate observation, and a little judicious reflection, will supply the medical practitioner with such information as is most necessary on the greater number, and most important, of the subjects above referred to.

We now come to the observations of Dr. Balme on the *medical treatment* of the disease under consideration. This section of the work has given us the most favourable idea of the talents of the author. He here reasons with precision on his own physiological principles, and illustrates his arguments respecting the appropriate therapeutical measures by many valuable facts, deduced from extensive practical observations. We need not, however, dwell much on this part of the subject; since the medical treatment so naturally flows from the theoretical view which he has taken of the nature of the disease.

The basis of the general treatment should be subordinate to measures expressly opposite to the regimen to which the patients may have been previously submitted. There are no medical substances whatever that are calculated to be productive of benefit in all cases; and the abuse of those which physicians have chosen to term expressly *anti-scorbutics*, has often produced scurvy in persons who had the slightest disposition to it. We must not imagine, that the substances which have been efficacious against this affection, always cure it by mingling with and remedying the bad state of the fluids: it is appropriate aliment, measures which improve digestion, a pure and dry air, intellectual amusements, and lastly, an increase of the irritation of the system, which effect the removal of the disease. The stimulant treatment, indicated in scurvy, must vary according to the severity and stage of the disorder. "We must follow the conduct which the Brunonians adopt in the treatment of a disease from direct debility; it will be necessary to commence with the use of gentle stimulants *(præmissis præmittendis)*, and proceed gradually to more active ones. For, in direct proportion to the length of time which an animal body has been deprived of its natural stimulus, or non-natural and habitual, will be the degree of the accumulation of its irritability; and it will become very sensible to the impression of the slightest

stimulant which, in one in the state of health would have hardly any effect."

Many cases have been observed to be much alleviated by a natural or artificial hæmorrhage, probably by the change thus induced between the relation of the fluids and solids. When inflammatory congestion is present, it will be right to commence the treatment by abstraction of blood. Purgatives generally have good effects in the first instance, by removing accumulations of viscid matter with which the intestines are loaded, and thus favouring the influence of stimulants. They must, however, be very gentle when there exists any disposition to a dysenteric affection.

After these preparatory measures, and particularly when the disease has been of long continuance, the cinchona will in general be found beneficial; but it must not be employed except when congestions in any of the abdominal viscera do not exist.

When the exclusive use of salted aliment has appeared to have given rise to the disease, fresh vegetables, the juice of oranges, lemons, &c. are generally more efficacious than the Peruvian bark. The alkaline carbonates taken with vegetable acids, are often more beneficial than the pure acids.

It will also be necessary to vary the curative measures from time to time, when the disease is of long continuance; since these agents are apt to lose their influence on the system after a short period, on these occasions.

Moderate exercise; baths, particularly those of the vapour of alcohol, vinegar, &c., are also indicated. In some very severe cases, bark, with opium in large doses, has afforded relief when all the ordinary means had been inefficacious. "May not the good effects which we have obtained from bark and opium," says Dr. Balme, "as well as those which other practitioners have derived from corrosive sublimate, arsenic, &c. depend on the changes which these measures have produced in the states of the digestive system.

"On taking into consideration all that has been stated in this work," continues the author, "and especially the essential cause of scurvy, which we have attributed to a state of asthenia of the digestive organs, consequent on their having been accustomed to the uninterrupted impression of aliments of one and the same species, which, continued for too great a length of time, at length cease to act as stimulants; we repeat, 1°, that this asthenia of the stomach, &c. increased by derangement of the functions of the cutaneous and muscular systems, augments, in return, the lesion of those parts, and *vice versâ*; and 2°, that this asthenia of the primæ viæ may be diminished by a state of vigour and energy, maintained or re-established, of the organs of motion, or of the intellectual faculties, and by a dry state of the atmosphere; and lastly, that, from the frequent absolute inutility of all the antiscorbutic measures hitherto the most exclusively recommended, it appears evident, from precise observations, that neither vegetables nor any other substances, combat scurvy by a specific virtue;

but that a change of regimen, favoured as much as possible by a modification in the use of the non-naturals, forms the true basis for the medical treatment of scurvy."

Dr. Balme terminates this work by some *considerations on the qualities, duties, and prerogatives of a Physician;* but these, although judicious and well-arranged, will excite but little interest after the perusal of the Letters of a Gregory.

On revising the observations we have deduced from the work before us, we perceive that they bear a very desultory character, and want that precision of information which it is our desire to convey to our readers, respecting the subjects of our critical labours. This, however, on the present occasion, must be, in a great measure, attributed to the nature of the work whence they were deduced, which is so encumbered with quotations and references, (multitudes of authorities being adduced in support of every proposition), that it is extremely difficult to preserve in view the author's train of arguments on any subject; and, indeed, the perusal of the work is thus rendered so fatiguing, that nothing but the belief that it contains some good and useful principles, could render it at all supportable.

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## *An Essay on the Consequences of the more severe States of Puerperality;* by J. E. Fodéré, M.D. Professor to the Faculty of Medicine at Strasbourg.

*(Concluded from page 446.)*

After having isolated puerperal fever from the various diseases with which it may be complicated, we should enter into a critical examination of the causes to which it has been attributed: perhaps a ray of light may be elicited in the course of this enquiry, that will illustrate the true nature of the malady.

The causes of puerperal fever are numerous, and may be divided into those which existed before parturition; those which were produced during that period; and those which occur after delivery.

*Before Parturition.*—On considering the mode of life of women in general, we perceive that those who are poor continue to pursue during pregnancy, the rudest species of labour; and that those who are rich abandon themselves, when in the same state, to every excess of luxury, to passions, and to venereal pleasures; they continue throughout the whole term, to gorge themselves with food; and their dress, being regulated by fashion, often exerts powerful and injurious compression on the abdomen. This excess in the use of food, is a circumstance of much weight with those who consider the fever of lying-in women as arising from gastric inflammation. They dwell on the disposition of pregnant women to congestions in the bowels; on the depression of spirits and fear which often precedes labour, and which weakens the digestive system; on the vomitings and diarrhœa which frequently occur; on the good effects that have been derived from emetics and purga-

tives, &c. They add, and pathological anatomy obliges us to consent to it, that, when the intestines have been irritated by acrid matters collected in them, it is not rare to find, after death, traces of actual inflammation, not only in these, but in the whole of the peritoneum and its diverse productions. We are far from denying the eventual power of these causes to produce peritonitis; but everyone will acknowledge, that they are too frequent, and puerperal fever too rare, to permit the latter to be considered as their necessary effect. Acrid matter in the bowels may certainly contribute, if not to produce it, to render puerperal fever more severe. It is, however, but rare that the most intense gastric inflammation produces collections of purulent matter in the cavities of the abdomen or thorax; besides which, they are never so formidable, nor so promptly fatal, as puerperal fever. We therefore regard gastric irritation, either as a complication with the disease in question; or, perhaps, as an affection that has often been mistaken for that malady, when evacuants have acted so specifically in its cure.

*During Parturition.*—The largeness of the head of the fœtus; the different obstacles opposed to the facility of its birth; the abuse of instruments, or of the use of the hand during labour; the violent or unappropriate extraction of the placenta; the retention of the placenta, or of coagula of blood, in the uterus; the bandages with which the belly is bound immediately after delivery; the reflux of blood in the viscera contained in the lower part of the abdominal cavity, in proportion as the uterus contracts after delivery, &c.; have been successively accused as the means of producing the most severe consequences of parturition: but we would again say, that the frequency of these should, as causes, induce much more common effects. We daily see, that of several women who have had equally laborious parturition, and who have been delivered by the same process, that some will become affected with puerperal fever or with peritonitis; whilst others will not experience any unpleasant occurrence. We have seen severe symptoms, with tumefaction of the belly, sometimes result from retention of the placenta, or of portions of that organ, or of coagula of blood; but which have been dissipated as soon as the extraneous body has been rejected, even when they have been long previously retained. I do not then fear to affirm, being supported by long experience, that, although laborious parturition, and the manual operations used in such cases, and the various faults otherwise committed, should, and really are sometimes, the causes of the prompt development of puerperal fever; yet, notwithstanding the derangement of the animal economy caused by consensus with the uterus, notwithstanding the Cæsarean operation, &c. this fever is a much less common accident than the existence of these different causes of irritation, however powerful. As to the reflux of blood, it must take place in all cases when an organ is reduced to its primitive form; but such consequences are not witnessed from it. Besides, this mechanical explanation would not

shew, why puerperal fever is most frequent in hospitals, and why it sometimes occurs epidemically.

*After Parturition.*—An opinion that was generally spread abroad, and which is still adopted by some physicians possessing but little real knowledge, is that which attributes the inflammation of the peritoneum, the effusions into the cavity of the abdomen and other parts, and the fever of which we are now expressly treating, to metastasis of the milk; or to neglecting to give suck, either from a disinclination to do this, or from the loss of the infant. Others, in imitation of SYDENHAM, attribute them to suppression of the lochiæ. Many, to refrigeration of the parts about the genitals, induced by the discharges, &c.; and to the little care that some women in this state take of themselves. It is this which has even been adduced, as a reason why women are less frequently attacked with puerperal fever who have had a severe labour, than those in whom that function has been less painful and irksome. We will not deny that, in some individuals, inconvenience has been experienced from the want of the appearance of milk in the breasts; but, on the other hand, if we examine this subject without prejudice, we shall perceive, that the ill consequences of it are not so frequent as generally stated, and that many women escape this secretion, without thence experiencing any inconvenience. Puerperal fever, as I consider it, has been observed after miscarriage, when the breasts did not contain any milk; it has also been witnessed when the mother suckled her infant, and there has not been any deviation from the ordinary course with respect to this function. Reason and experience are equally repugnant to the admission of metastasis of the milk, as a cause of puerperal fever.

As to the lochiæ, the suppression of which might really be a cause of peritonitis, or inflammation of the uterus, this evacuation continues very often during the course of puerperal fever; and they are frequently suppressed, or evacuated only in very small quantity, without ill consequences. This suppression should not then be considered as a constant cause of that malady.

The influence of cold would equally tend to produce inflammation of the uterus and peritoneum; and I regard it as a frequent cause of this accident and of acute dropsy, from which many women perish who leave their beds too early. Nevertheless, after having seen how the women of the lower order of peasantry conduct themselves, as well as girls who are delivered clandestinely, and women who follow armies and keep up with them in their march after delivery, without accidents; I am forced to consider, that the latitude of this cause is infinitely less extensive than a man would believe, who had seen nature only in his study.

These perils, and many others, are traversed by the greater number of women, and the preservative genius of the species leads them through them with safety: some few, however, are stopped in their course. Why this fatal predilection? We must necessarily conclude, that there is in some women a particular disposition

to the determination of puerperal fever, with or without peritonitis; and that, in certain cases, it owes its origin to epidemic causes. This disposition, which cannot be always distinguished or foreseen, gives rise to one of the greatest difficulties in the art of healing, especially in women, the diseases of whom are so "*bizarre;*" and it explains the origin of the fatal peritonitis, which has been observed to ensue from the application of a ligature to uterine polypi.

On reflecting seriously on the picture which we have given of puerperality, it will become evident to every unprejudiced person, that this calamitous disposition of lying-in women to the most severe diseases, depends on the excessive exaltation of *sensibility,* to its alteration, to its deviation towards an organ as it were new, which draws to itself at this time all the vital powers. It is well known, that this exaltation in the organs within the department of the great sympathetic nerves, never occurs without successively inducing lesion of the other systems and organic tissues; which takes place with great rapidity, not only under these circumstances, but also in many others unconnected with parturition, when the nerves which I have mentioned suffer primitive lesion. It is notorious also, that, when puerperal fever is simply sporadic, it is those of great mobility of habit who are affected with it; it is imperious, capricious, choleric, women, are its subjects,—states of mind which I have always seen develop themselves, and become exasperated, during the whole course of this disease. Certainly, when I call to mind all the women whom I have seen perish from this fever, I well recollect that the disease commenced in all of them after a fit of anger, although nothing extraordinary had apparently happened to them; whilst other women, who had suffered much, but who were calm and patient, passed this period without disturbance. We should also connect with the idea of puerperal fever, that tendency which lying-in women have to chronic delirium, without any material cause; the frequency of coma and acute delirium, during the whole course of the fever; and the facility with which slight terror will suddenly induce it, in women apparently in the most favourable state. Thus, FRANCK has seen it instantly produced in lying-in women on the tolling of the passing-bell, who had been alarmed by the remembrance of the death of so many other women in their situation, and which was renewed by this doleful sound. All these considerations well reflected on, all these phenomena, lead me irresistibly to define primitive puerperal fever, isolated from its complications, *a state eminently nervous; an abdominal spasm; during which the functions are interrupted, and the phenomena secondary to parturition (the determination of the fluids towards the breasts, and the flow of the lochiæ,) do not take place, or are ill performed.*

Its being sometimes accompanied with peritoneal inflammation, (which I do not deny,) is of no importance as an objection to the above definition. It is not a rare circumstance to see diseases, where the sensitive and vital system is primitively affected, accompanied with prompt re-action of the circulatory system of the

neighbouring parts. It is not repugnant to it, that there is inflammation, or at least something analogous to it, although there be weakness; and examples are often seen, of an organ concentrating in itself all the powers of life, and being affected with inflammation, whilst the other parts of the system bear the character of debility. Typhus itself has often furnished us with opportunities of witnessing this apparent contradiction, either on the opening of bodies, or in the observation of the good effects ensuing from hæmorrhage, whether spontaneous or produced by art. Inflammation may then be present in some instances, and not exist in others, as I have already shewn, without this accident being considered as an essential cause of puerperal fever.* In most instances, peritonitis is only an effect; just as we witness inflammations at the termination of malignant fevers, which no person has hitherto thought proper to attribute to inflammation. However, peritonitis and puerperal fever may, in certain cases, arise at the same time, on the occurrence of causes adapted to favour the production of the former; and this distinction of priority of cause and effect appears to me to be of great importance in the treatment of the disease, and in the explanation of the results obtained from contradictory measures.

These explanations are particularly applied to sporadic puerperal fever; as to that which is epidemic, all constitutions are equally attacked by it, after the single circumstance of parturition: and this epidemic character is most frequently observed in hospitals, in unhealthy situations, wherever there is impure air, and in certain constitutions of the atmosphere proper for giving rise to putrid diseases; a consideration which should again caution us against the exclusive idea, adopted by men for whom I have the greatest respect, of the existence of inflammation of the peritoneum in puerperal fever, being an essential occurrence.

I acknowledge, however, that this purely nervous character is sometimes hardly to be distinguished solely and isolated; that most frequently it is observed complicated with an inflammatory diathesis, at least in the commencement, or with gastric inflammation; and, in epidemic cases, with putrid or adynamic fever, or with symptoms produced by lesion of some organ which was in a diseased state before parturition: but it will always be useful to consider, that it constitutes the foundation of the disease, and that this must not be submitted, in all cases, to the same mode of treatment.

Similar to certain miasmata eminently septic, or to the virus of certain serpents which causes death before nature has had time to produce the phenomena of re-action, this nervous state of which I speak, may run into the most complete ataxia (nervous debility). There may be such a concentration of sensibility in the uterus, and such an absence of vital power in the rest of the economy, effected during gestation and parturition, that the slight breath of life which remains may be suddenly extinguished, and before the ordinary symptoms are developed. This is what I

always fear after a severe labour in delicate and sensible women, who are only an extremely mobile walking shadow. In some instances, a slight pain will terminate what more severe and long-continued sufferings had commenced. I have seen a dose of opium, in others, rapidly consume what has remained of a life exhausted by long sufferings and repeated spasms. I have seen a patient, who has been sickly and languishing during pregnancy, become suddenly extinct, after having had a regular labour without hæmorrhage. What is still remarkable in these instances of sudden death of lying-in women, is, that the infants are almost always born dead. I cannot find a better comparison with this dreadful catastrophe, than a very acute colic, running through its fatal period within three hours, observed in Spain by Dr. Hurtado, characterized by excruciating pain in a fixed point, happening suddenly to persons who had suffered severe moral depression, accompanied with frequent, vibrative, and contracted, pulse; cold sweats; rapid change of the countenance; and lastly, followed by gangrene of the intestines. The theory which Dr. Hurtado formed of this disease, enabled him to save many of its subsequent patients.

The *nervous fever* of lying-in women, or puerperal fever, is insidious; and the treatment of it is so difficult, that the most sure is certainly to use all our efforts to prevent it. It has become the fashion to contemn everything that was formerly considered to be temporising and prudent, but our fathers, it appears to me, were, on the subject under consideration, much more wise than we are; and sentiment guided by experience, led them to take many precautions in the management of women before and after parturition, which are now, perhaps improperly, considered to have arisen from prejudices. I cannot enter into an examination of all these precautions, which may be found in all treatises on the subject; I shall content myself with an enumeration of the principal ones; for example:

1°. Those which relate to the state of pregnancy. They had been accustomed, from time immemorial, to have recourse to blood-letting on the approach of the period of delivery, if the woman was plethoric; and this custom should be preserved as a good one: the abuse of it is only to be reproved. To remedy the effects of the pressure which the uterus exerts on the surrounding parts, they advised a diminution of the quantity of animal food and fermented and stimulating drinks, towards the termination of pregnancy; to keep the bowels lax with mild aperients, or with glysters; and the use of exercise in the open air. The choice of regimen should be subordinate to the constitution of the patient. A free and regular state of the bowels cannot be made too general a precept; and, with respect to compression of the abdomen, it should become an object of public prohibition. With regard to exercise, I have already said that the poor use too much: this precept, then, can only concern the rich. Now, although it be right in principle, it will be evident that violent exercise cannot

be proper during pregnancy, and that the degree of it must vary according to circumstances. I even believe that repose is necessary for those wretched women to whom exertion is at all times a labour, and who would certainly be much exhausted by any considerable degree of exercise. Happy would it be for us if we could regulate the passions of a pregnant woman! but who can be the master of all the accidents of life, during the long term of nine months?

2°. Relative to delivery. It was not without urgent motives that it has been decreed, that a woman recently delivered should be carried to her bed, and not permitted to walk there; that the bed should be a little warmed; that she should remain in bed at least eight days; that she should not be soon exposed to the air; and that she should not return to domestic occupations before the lapse of forty days. All experienced observers agree, that, of all the causes of disease in lying-in women, the most frequent is that of rising from bed, and exposure to the air, at too early a period. With respect to diet, there have been two opposite opinions: according to one, the use of a restorative regimen has been stated to be necessary, from a persuasion that a lying-in woman should be treated like a person exhausted by fatigue, or long-continued disease: the other has been derived from reflection on their disposition to inflammation; and it has thence been said, that there is no occasion on which a woman should be confined to more restricted regimen. Between these extremes, equally blameable, no other rule can be traced, than that the physician should act according to the strength of the woman, and the condition in which she may be placed. A precept more generally useful, is, that to procure a free state of the bowels (with due precautions) soon after delivery, and to preserve it throughout; especially in women who do not give suck. It may be useful to retain the custom of applying a bandage round the pelvis; but I would forcibly blame an habit of the women of the present day, that of tightly binding-up the abdomen as high as the ribs, in order to prevent them from acquiring a prominent belly; and I am convinced that this conduct is frequently productive of very bad consequences.

Lastly, if, as we have already stated, it is impossible to preserve a pregnant woman from all sorts of disagreeable impressions, so the short term of puerperal confinement does not prevent the probability of the occurrence of the same accidents; and the dreadful consequences which powerful emotions cause during this period, should call forth all our care, prudence, and circumspection, to guard our patient from their influence. We have already repeatedly mentioned, that there are constitutions of the atmosphere, and insalubrious situations, which are very hurtful to puerperal women: if the former cannot be avoided, the second are entirely at our disposition. It is, for example, easy to preserve the greatest propriety in their chambers, by dispelling all unpleasant odours; removing useless persons; preserving a moderate temperature, and frequent renewal of the air, taking care, however, that no current may directly fall on the patient.

It is but rarely that we are called in time to treat puerperal fever in its most simple form. If we are sufficiently fortunate to see the patient at the commencement of the disease, it will perhaps be possible to check the fever suddenly, in combating it during the first shiverings, by warm and slightly-aromatic drinks, and emollient fomentations applied to the abdomen and inferior extremities. If this state continues, we should not hesitate in the first instance, to produce a more general diffusion of the vital powers, by employing cupping-glasses and rubefacients, applied successively to parts extending from the region of the uterus, commencing the train from the pubis, then above the navel, on the chest, and at length between the shoulders and on the arms. Warm barley-water, with elder-flowers infused in it, should be given as drink, to produce perspiration; with anodyne medicines, to procure calmness and sleep, according to circumstances. The strength should be supported by veal or mutton-broth, given every two or three hours; and the bowels should be opened by simple glysters of infusion of chamomile-flowers and honey.

I am persuaded, though I have not yet had sufficient experience to make me very confident, that this mode of treating puerperal fever on its first invasion will, in a great number of cases, be much more salutary than those powerful medicines employed from this or that suspicion, the success of which is subordinate to the hazard of divination. However, I do not deny that the spasm, which I regard as the primitive cause of the pain and tension of the belly, will give rise to more fixed lesions; and besides, we know that complications may soon alter the simplicity of the disease. Authors have hardly ever remarked it except in this form, and it is thence they have deduced their rules for the mode of treatment, which may be distinguished into three methods: the antiphlogistic, purgative, and mixed. We shall take a rapid view of the whole, and indicate the cases to which each may be respectively appropriate, when the disease can no longer be seen in its greatest simplicity.

The first method, recommended exclusively by Leake, who considered this disease as a true inflammation, has in like manner been put in practice in two epidemics of puerperal fever, in 1810 and in 1811, by Ramsbotham, Gordon, and Hey; at London, Aberdeen, and Leeds: the places where the malady raged with greatest violence. Considering this fever as an active inflammatory disease, the practitioners above named judged that its specific treatment consisted in blood-letting to the quantity of from twenty to twenty-four ounces, and even more, according to circumstances, immediately after the invasion of the malady. They afterwards prescribed purgatives in large doses, for which purposes calomel was employed. In addition to this general treatment, leeches were employed to the abdomen, and the consequent hæmorrhage maintained by warm fomentations; with glysters, with or without opium, frequently repeated. They state, from the success with which it was followed, that this method should be boldly em-

ployed, and put in practice after the shivering; that, otherwise, it indubitably failed, and only hastened the death of the patients; that, some hours later, palliative measures should only be resorted to, which are all of but little utility. Cinchona, stimulants, and vesicatories, appeared to Mr. Hey to be more injurious than beneficial; (I have also observed the same thing with respect to cinchona, but this does not apply to vesicatories;) opium, camphor, the neutral salts, were of but doubtful efficacy; but digitalis appeared to him to be of incontestible utility.

It is well known that all the methods hitherto employed, having been inefficacious against puerperal fever at the Hôtel-Dieu at Paris, Dr. Doulcet, in 1782, proposed and put in practice the following treatment, which has preserved his name, and which has indeed been efficacious at different epochs. It consists in seizing the instant of the invasion of the disease, to give fifteen grains of ipecacuanha in two equal doses, with an interval of an hour and a half; to repeat the remedy on the following day, although the pain and tension of the belly may be diminished; and to repeat it three or four times, if these symptoms continue; to open the bowels with a potion composed of two ounces of oil of sweet almonds, one ounce of syrup of marsh-mallows, and two grains of kermes-mineral; to continue the use of this potion for eight days, and to give as drink merely infusion of linseed; and lastly, to purge, after this time, with manna and sulphate of potash.

Denman, who has well treated of the fever in question, appears also to have at first considered it merely as arising from gastric irritation; since he speaks of a case that terminated favourably in 1767, which he attributes to emollient glysters and James's powder. However, he soon changed his language, and terminates his essay with remarking, that the disease is originally of a true inflammatory character, affecting one or more parts contained in the abdomen, but promptly contracting a character of putridity more or less marked, according to its intensity, and to the treatment employed during the inflammatory state. We find him, in consequence, have recourse to a mixed method; directing in the first instance one or two blood-lettings, then administering antimonial powder, which was daily repeated, giving in the evening an opiate to calm occasional irritation.

These different measures, and the different mode in which the same practitioner has viewed the disease at different times, indicate alone that this fever, deprived of its primitive simplicity, assumes a different character, according as it is more or less complicated. We have, indeed, frequently seen physicians, deceived by the pain and tumor of the belly and by the idea of peritonitis, lose their patients under the lancet and the application of leeches to the abdomen. The physicians of Aberdeen and Leeds have not stated what directed them in their absolute employment of blood-letting; but I suppose that, in the cases in which it succeeded, the patients were strong and plethoric; and that the disease was of a peculiar inflammatory character, occurring at a season of the year favourable to the production of inflammatory diseases.

I have thought that emetics and purgatives have been particularly useful, to the exclusion of all other remedies, when the signs of inflammation have been wanting; when the patients had committed errors in diet, either during the latter part of pregnancy or after parturition; and when manifest symptoms of irritation of the stomach and bowels assumed a superiority over those of inflammation. One of the most perplexing circumstances, is that in which the disease appears with great debility, real and not merely apparent, (it should be remembered, that plethora and acrid matters in the bowels will produce apparent debility,) in a woman of an extremely delicate and sensible habit of body, very susceptible of emotions, worn-out by previous diseases or by discharges; when the pulse is, from the beginning, small and contracted; when fainting succeeds more or less rapidly, with convulsions, spasms, pale watery urine, in a word, with all the symptoms of ataxic fever: certainly all idea of peritonitis and gastric inflammation should here be discarded. The latter may, however, (but not always,) be complicated with this state; and ipecacuanha, according to the method of Doulcet, may here be proper, as well as a moderate evacuant, to draw to the stomach and other parts of the animal economy, the vital powers concentrated in the hypogastric region; and it is with these views that I have employed this remedy. We should, at the same time, quickly cover the patient with what are commonly termed *flying* blisters;* the good effects of which I cannot sufficiently praise. The hypogastrium should be covered with flannels embued with spirituous and aromatic liquids; and the strength should be supported by a diet somewhat nourishing. If the bowels are indolent, evacuations should be solicited by emollient and aromatic glysters; but purging should not be induced until the danger is over, and it should be effected with substances at the same time a little tonic, as rhubarb with mucilage of gum arabic. Cinchona, which Franck recommended, has not appeared to me to be useful: I have many times employed it, being deceived by the remissions of the fever, but the paroxysm has always returned with more severity. Musk and camphor may be useful, by inducing an equable diffusion of the vital actions.

But, alas! it is easy to write, and very difficult to execute, and particularly with success. We are often reduced to be no more than spectators of an unequal combat, and to moderate the symptoms. We should endeavour to relieve the vomiting and diarrhœa which frequently occur, and to alleviate the violent pain by glysters of starch and laudanum; and we should favour sweating, if it appears that there is a disposition to relief in this way, by acetate of ammonia, Dover's powder, &c. according to circumstances." (*Journal complément. du Dict. des Sciences Medicales*, Nos. 8 and 9.)

* Blistering-plasters applied only for a short time, so as to induce more or less irritation of the skin without vesication. Ed.

# MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

ALTHOUGH the discoveries which have been made during the late period respecting the pathology of dropsy, clearly indicate the appropriate therapeutical measures in the generality of cases, yet, as it is in physics as well as in morals, maxims and precepts effect but little without examples, we shall adduce some observations of Dr TWEEDIE,* to shew the efficacy of blood-letting in the dropsical affections consequent on scarlatina.

J. M. æt. five years, was affected with general anasarca, more particularly of the face and upper extremities; frequent short cough, with hurried and oppressed breathing. The urine was scanty; pulse 130, skin hot, and the tongue furred. She had passed through a mild attack of scarlatina about ten days previous to the occurrence of the above symptoms, but had laboured under hooping-cough, in a mild form, for nine weeks. Purgatives of calomel and jalap were exhibited for two days, without benefit. Four ounces of blood were then taken from the arm, which was a little buffy. She experienced immediate relief, and after four days was convalescent.

R. B. æt. five years, eight days after a mild attack of scarlatina, became affected with general anasarca, short dry cough, oppressed breathing, and scanty secretion of urine; pulse 144, and sharp. A "brisk laxative" was given for two days, without any advantage being thence derived; when he was bled to the extent of five ounces, with immediate and decided relief of the pectoral symptoms. The blood was not sizy. Two days afterwards the anasarca was almost gone, and in another day she was declared convalescent.

M. D. æt. fifteen years, about six weeks since laboured under scarlatina. After the disappearance of the efflorescence, she became affected with anasarca, which first appeared on the face, and gradually extended over the trunk and extremities. She complained of pain in the left side of the chest, with dyspnœa and cough, accompanied with a sensation of suffocation when she assumed the horizontal posture. These symptoms had existed eight days, when ten ounces of blood were taken from the arm. The following day she was found to be much relieved; a purgative was then given. The next day, the cough and dyspnœa were nearly gone, and the anasarca much subsided. Four days afterwards she was convalescent.

Dr. Tweedie has witnessed other analogous cases, in which the efficacy of blood-letting was equally prompt and decisive.

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* *Edinburgh Medical and Surgical Journal*, No. 58.

In the 2[3]3d Number of our Journal, we gave a[...] of the utility of the *Cubebs*, as a remedy for Gonorrhœa; and we again solicit the attention of medical practitioners to this remedy. Mr. Adams, late of Ceylon, has recently published, in the Edinburgh Medical Journal, some cases shewing its efficacy, and he is disposed to consider it as a specific in the early stage of that disease. Our own experience leads us to think very highly of it, when exhibited before inflammation has come on: at this period, when conjoined with the usual injection of sulphate of zinc, we have but rarely found it to fail in removing the affection within two or three days. After much inflammation has appeared, we have not thought proper to employ it; but Mr. Adams states, that,

"In referring to my case-book, I find those patients who did not derive any benefit from the cubebs, had previously used other remedies for the space of eight or ten days; the inflammatory symptoms had subsided, and the disease had so established itself, as not to be under the control of so simple a remedy."

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*Observations respecting the Duration of Utero-Gestation and of Incubation, in several Quadrupeds and Domestic Birds.* Extracted from a Memoir read to the *Académie Royale des Sciences* of Paris, by M. Tessier.—In 1,131 *cows*, the shortest period of gestation was 240 days, and the longest, 321 days: difference, 81 days; and, counting from 9 months, 51 days.

In 582 *mares*, which admitted the horse only once, there was, from the shortest gestation (or 287 days) to the longest (419), 132 days; and, reckoning from the 330th day, or eleven months, 89 days.

In 312 *mares*, which had leaped several times, (in dating from the last,) from the shortest gestation, (that is, 290 days,) to 377, the longest, 87 days; and from the 330th, or eleventh month, 47 days of prolongation.

Of two female *asses*, one carried 380 days, or twelve months and twenty days; the other 391 days, or thirteen months and one day.

In 912 *ewes*, the difference was from 146 to 157 days; and from the fifth month to extreme period, seven days.

In eight female *buffaloes*, there was a difference of 27 days between the shortest and longest period; and the latter extended to 338 days, or ten months and 28 days.

Two *bitches* carried 62 days, one 61, and one 58; which gives, in four animals only, a latitude of four days.

Twenty-five *sows* littered, from 109 to 133 days.

Between the extremes of gestation of 161 *rabbits*, there was an interval of eight days: one of these was the 27th day, the other the 35th.

*Incubation.*—Several turkeys having sat on the eggs of *hens*, the duration of the sitting was from 17 to 27 days; the same on *ducks'* eggs, 27 days; the same on *turkeys'* eggs, from 26 to 29 days.

Hens ... ucks' eggs, from 26 to 34 days; on those of their own species, from 19 to 24 days.

In *ducks*, the duration of sitting was from 28 to 32 days.

*Common geese*, from 29 to 33 days.

*Pigeons*, from 17 to 20 days.

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## *Medical Statistics.*

*Extracts from the Bills of Mortality, drawn by the twelve Municipalities of Paris, for the Year* 1818.

The number of deaths in the city during the year, was 21,821

of which, there happened in private residences ........ 14,478
Of the male sex ..... 7,183
— female ....... 7,295
the remaining .................... 7,343
took place in hospitals; of which, 3,633 were males,
and 3,710 females.

The number of persons who died from small-pox, was ... 682

It is well known, that this afflicting result from the small-pox, the ravages of which have lately been progressive, can only be attributed to the influence of the priests, who preach against vaccination.

Amongst the 21,821 deaths, are comprised 257 which occurred in jails, or of persons whose dead bodies were deposited in the offices of the police; of which there were 202 males and 55 females.

Those from suicide have not been distinctly calculated, but the number appears to have been very considerable; and it has, for several years past, progressively increased.

The principal causes of mortality are stated as follows:

| | Men. | Women. | Total. |
|---|---|---|---|
| Fevers, putrid or adynamic | 400 | 443 | 843 |
| ——— malignant or ataxic | 391 | 424 | 715 |
| ——— intermittents | 171 | 319 | 490 |
| Phlegmasiæ, cutaneous | 746 | 649 | 1,395 |
| ——— of the mucous membranes | 1,237 | 1,453 | 2,690 |
| ——— of the serous membranes | 202 | 281 | 483 |
| ——— of the cellular tissue and the parenchymatous organs | 1,454 | 1,858 | 3,312 |
| Comatous affections | 496 | 503 | 972 |
| Spasmodic ——— | 787 | 732 | 1,519 |
| Local nervous | 501 | 512 | 1,013 |
| Organic lesions, general | 1,895 | 2,063 | 3,958 |
| ———, particular | 802 | 900 | 1,702 |
| Grangrenous inflammation | 80 | 101 | 181 |
| Puerperal women | | 75 | |

Many children died from spasmodic affection, at an early age; for instance:

| | |
|---|---|
| From one day to three months | 250 |
| — three months to six months | 126 |
| — six months to one year | 232 |
| — one year to two years | 341 |
| — two years to three years | 117 |

| | Males. | Females. | Total. |
|---|---|---|---|
| There died before the age of three months | 2,202 | 1,752 | 3,944 |
| Before the age of two years | 3,434 | 3,033 | 6,467 |

The total number of deaths between two and five years, was .......... 1,784

| | |
|---|---|
| Between five and ten | 1,034 |
| — ten and twenty | 1,257 |
| — twenty and thirty | 1,658 |
| — thirty and forty | 1,480 |
| — forty and fifty | 1,568 |
| — fifty and sixty | 1,786 |
| — sixty and seventy | 2,281 |
| — seventy and eighty | 2,006 |
| — eighty and ninety | 781 |
| — ninety and ninety-five | 59 |
| — ninety-five and a hundred | 7 |
| Above a hundred | 0 |

We have drawn up this last account in the same order with that of our own Bills, that the reader may compare them without trouble.

It is observed, that an important reform is requisite in the constituting of the Bills of Paris, and that the "conseil de salubrité," attached to the "prefecture de police," is engaged in the perfecting of them. It is very evident, that a similar measure respecting our own is very desirable.

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Amongst the list of *Prize Questions* in the Number of our Journal for April last, we stated, that the question respecting *Uterine Hæmorrhage* was again proposed, by the "Société Medicale" of Paris, for the ensuing year; the commission not considering that either of the Memoirs presented possessed that degree of excellency that they desired to be evinced on so important a subject, although honourable mention was made of two, especially, and medals of reward conferred on their authors. It will be interesting to many of our readers, to hear that Madame Boivin received the second; and we feel much pleasure in thus signalizing the merits of that learned and very intelligent gentlewoman. She has recently published a translation, with notes of considerable merit and value, of the Treatises of Drs. Rigby and Stewart on the same subject. Her whole acquirements indeed shew, that nothing more than a proper mode of professional education is requisite, in order to render her sex fully competent to the practice of the obstetric part of the medical art. We wish our limits would permit us to indulge in the transcription of the

Report made on the Memoir to which we have alluded; but we can only observe, that it appears she had not effected all that was expected, only because she had indulged too far in anatomical and physiological observations, which occupied so large a proportion of her Essay, that "on pourrait presque dire que, plus tard, le temps lui a manqué pour deployer sur les points qui ont le plus de rapports avec l'objet du concours, cette richesse de connaissances pratiques qu'on aime à trouver dans les productions de ce genre." With respect to the preliminary part it is observed, that they are "claires, methodique, et bien dévelopées;" and on the pathological, "il brille surtout par un esprit d'ordre et une méthode qui méritent de grandes éloges." Our readers, who have visited the *Hospice de la Maternité*, will read the above extracts with much gratification, and utter a vow for such an establishment in London.

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***Observations on Phosphorescence in Terrestrial Animals***, *(continued from page 453.)*—The *lampyris*, known by the name of the *glow-worm*, bears the phosphorescent matter at the posterior extremity of the abdomen, about the two or three last rings: they can, as well as the former species of elater, voluntarily conceal this luminous substance. When it shines most vividly, it evolves a bluish, or emerald-green, light; when it is very feeble, it displays merely a slight orange-coloured glow. This light is excited by the motion of the insects. The yellowish luminous substance may be removed from the animal, and it continues *phosphorescent* as long as it remains soft, whether in the open air or in the vacuum of the pneumatic apparatus. It loses this light on becoming dry, but it may be recovered on moistening the substance with warm water. Cold water extinguishes the light of glow-worms, but they evolve it in hot water. These insects live for a long period in a vacuum and in diverse non-respirable gases; but they all perish in the sulphurous, nitrous, and hydrochloric. Some persons have thought that hydrogen gas was sometimes rendered more detonating by their stay in it for some time.

By means of this light, the sexes meet each other: the females are the most brilliant, for the purpose of attracting the males; for the former do not often develop wings. Geer has observed, that the nymphs were also luminous. They are very common in hot climates; and, when flying about, they appear like sparks of fire amongst the flowers and shrubs, producing a very agreeable effect in the evening during summer. Carradori and Lichtenberg have remarked, that the light of these insects becomes more bright when they are plunged in oxygen gas. There are several species of luminous lampyris: the *lampyris noctiluca* and *splendida* are our glow-worms; the *italica* is the luciola of the Italians; there are also the *ignita*, *phosphorea*, *nitidula*, *lucida*, *Japonica*, *Pensylvanica*, &c. Gueneau of Montbeliard has observed, that these insects lose all their phosphorescence after copulation.

Aszelius discovered another coleoptere, the illumination of which is very singular. Its two antennæ are dilated at their extremity into little globes, and these globes are two phosphorescent

lanterns, with which it enlightens
*paussus spherocerus*, is described in the
tome iv.

Amongst the hemiptereal insects, the *fulg*
nomenon of phosphorescence in a remarkable ee.
MERIAN has described the great lantern-bearer, (*fulgora lanternaria*, L.) of Surinam and South-America: its front is developed into an enormous spherical vesicle, which is full of a luminous matter so bright, that one may by its means read the smallest characters in the darkest night. It appears, that this lucidity is not present during the whole life of the insect; but it is, without doubt, at the epoch of their sexual passions, as in the lampyres. There are many others of this species equally luminous; as the *fulgora candelaria*, and F. *pyrorhynchus* of Asia. Grasshoppers are also phosphorescent, according to OLIVIER.

PATRICK BROWNE has also witnessed a species of nocturnal butterfly, *pyralis minor*, which presents on the inferior part of the abdomen a feeble and vacillating light, becoming obscure at intervals. It is probable that many gnats and moths, the males of which so often fly into the flame of our lamps, recognize their females during the night, only by means of feeble lights which our eyes do not discern; for all nocturnal insects that come and throw themselves into the flame, instead of flying from it, well evince (as the lampyres, &c.) that they find each other by means of their luminous appearance.

The scolopendræ have, under some circumstances, been seen to display a lucid brightness, either electric or phosphoric, according to Geer and other observers: such is the *scolopendra electrica* of Europe, and the *scolopendra phosphorea*, seen in Asia by EKEBERG. These venomous insects also avoid the open day.

It may then be established, that the phosphorescence of insects depends on an organization peculiar to many species of nocturnal animals; that it enables them to discern each other during the epoch of their sexual passions; and that the gelatinous matter, whence it is derived, only evinces this lucidity during the time of the greatest vigour of the animals, since it is extinct even before their death, when they have engendered. Since a chemical analysis has not been made of this luminous matter, and only some experiments on it in different gases effected by GROTTHUS, CARRADORI, SPALLANZANI, &c. we cannot conclude that its lucidity depends on phosphorus. We always find phosphates of lime and of magnesia in analyses of many insects.

Earth-worms or lumbrici, on some occasions, and when they leave their habitations for the purpose of copulation, have appeared phosphorescent. (See FLAUGERGUES, *sur le Phosphorisme des Vers de Terre;* Journal de Physique, tome xvi. p. 311; and J. G. BRUGUIERE, *Journal d'Histoire Naturelle*, tome ii. p. 267.) We are ignorant of the cause of this phenomenon, which, however, is principally witnessed during the generative epochs of the animals. (VIREY, *Journal de Pharmacie*, Jan. 1819.)

*... of Medical Books.*

... translation of Dr. WILSON PHILIP's ...ses, by Dr. LETIE, was published in Paris

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